THE ARBITRAL DETERMINATION OF RAILWAY WAGES

By J. NOBLE STOCKETT, JR.

A DISSERTATION submitted to the Board of University Studies of The Johns Hopkins University in conformity with the requirements for the Degree of Doctor of Philosophy 1916

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NOTE

An obituary note must, sadly enough, take the place of the foreword which should have prefaced this essay. The author's life, rich in scientific promise, was snuffed out at the very threshold of a scholar's career, and this brilliant essay remains as the melancholy exhibit of what larger things might hereafter have been achieved.

J. Noble Stockett, Jr., was born in Baltimore, on February 27, 1889. He received his elementary education in the public schools of Baltimore, graduating from the Baltimore City College in 1907. He entered the Johns Hopkins University in 1907 receiving the degree of Bachelor of Arts in 1911. After teaching two years at the Kent School, Kent, Connecticut, he returned to the Johns Hopkins University and pursued graduate studies in Political Economy for three years. He received the degree of Doctor of Philosophy in June, 1916, and immediately thereafter was appointed Instructor in Political Economy in Dartmouth College. He died at Hanover, New Hampshire, on September 28, 1916.

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INTRODUCTION

SETTLEMENTS of wage disputes by means of the accepted methods of maintaining industrial peace — mediation or conciliation, voluntary and compulsory arbitration — have been effected in the past by appeal to expediency and compromise, rather than by a consideration of the merits of the arguments presented by the two parties. The frequency of strikes and lockouts, the recurrence of disputes followed by applications for government mediation or arbitration, and the general feeling of antagonism still existing between employers and employees, give ample evidence that these peaceful methods do not reach the source of the trouble. Especially is this true in the case of wage disputes. In the past, the primary object of mediation and arbitration has been the maintenance of the processes of production in continuous operation, and questions concerning wages have been approached and decisions rendered with this purpose in view. The desideratum has been a prompt, speedy settlement, and this has been attained at the sacrifice of a determination based on the merits of the respective claims and on some principle of reasonable

wage determination. The result has been a lessening, perhaps, in the number of strikes and lockouts and in the interruptions to production; but the underlying causes of wage disputes remain unaffected by mediation and arbitration decisions, and capable at any time of causing new disputes and of arousing still more unfriendly relations.

It may be asked whether the failure of these methods of maintaining industrial peace to offer a clue to the solution of the wage problem lies in any inherent fault in the methods themselves, or in the manner in which they are at present applied. From its very nature, mediation can never approach such a solution. The mediator's function is to placate the disputants, to harmonize the differences between employer and the employee, and, by winning concessions from both sides through force of personality and tact, to effect an agreement acceptable to the parties concerned.[1] Compromise is inevitable. Mediation is not interested in the justice of the respective claims; the elements of fairness, reasonableness, and equity do not enter into the proceedings.[2] The employees endeavor to obtain as great a wage advance as possible; the employers, to concede as little as possi-

[1] Bulletin, U.S. Bureau of Labor, No. 98, p. 15.

[2] *Ibid.*, p. 15. See also Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, pp. 1973–1974.

ble; and the mediators, paring down here and adding on there, finally succeed in arranging a voluntary settlement. A mediation decision is merely an adjustment of the dispute, rather than a judgment on the merits of the case; the principles underlying the questions at issue are ignored, and adjudication of them postponed for the time being.[1] Arbitration, on the other hand, implies a weighing of the arguments of the respective sides by a board containing at least one impartial member, and an award representing a judgment upon the merits of the questions involved. The arbitrator's function partakes of a judicial nature; the decision rendered must be based upon some definite, accepted principle of reason governing the disputed question. There is nothing, therefore, in the method of arbitration to prevent the attainment of a permanent solution of the wage problem — a solution, in that the underlying causes of the wage dispute are met by the application of a reasonable principle of wages; and permanent, in that this principle of wages is always applicable, although changing external conditions will necessitate some alteration in the terms of the original award.

Arbitration, as at present practiced, has

[1] F. H. Dixon, "Public Regulation of Railway Wages," Proceedings of American Economic Association, 1914, Vol. XXVII, pp. 257–259.

little or no judicial character except in the form of the proceedings. Counsel for the disputants present briefs, witnesses are sworn and evidence introduced, the board adjourns to render a decision which is binding upon the parties; but here the parallel ceases. An arbitration award, like a mediation agreement, is almost without exception a compromise decision. Investigators, employers, employees, and arbitrators themselves testify to this. The Eastern Engineers' Board (1912) reported that compromise was practically inevitable under the Erdman Act.[1] President Garretson, speaking for the Conductors and Trainmen in their concerted movement of 1913, stated that "every settlement that has ever been made by these organizations has been a compromise settlement." [2] In some cases in which the award purports to be based upon a certain principle of wage advance, there is a strong presumption, when a comparison of the original demands of the employees and of the increase granted is made, that after all the award is a simple compromise.[3]

[1] Eastern Engineers' Arbitration (1912), Report of Board, pp. 100–101.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 531.

[3] For example, the switchmen on roads entering Chicago requested a six-cent increase in 1910, and received by the arbitration award of March 22, 1910, under the Erdman Act, an advance

There has been almost universal condemnation of the practice in arbitration of splitting the difference between the demands of the men and the concessions of the employers.[1] Professor Adam Shortt, who has served as chairman on numerous boards of conciliation and investigation in Canada, refers to it as a "demoralizing principle," [2] and Judge William L. Chambers, United States Commissioner of Mediation and Conciliation, when acting as chairman of the Eastern Firemen's Board in 1913, expressed the hope that the

of three cents. The increase was based on the cost of living, which the board determined had advanced twenty-five per cent, an equivalent of an eight-cent increase in switchmen's wages (Records, U.S. Board of Mediation and Conciliation, File No. 25). Again, in the dispute of the telegraphers with the Missouri Pacific in 1910 the increased cost of living was also given as the basis of the increase. There is little doubt, however, that the award was a compromise, for in a letter to Judge M. A. Knapp, dated July 27, 1910, the chairman stated that the men's representative had ". . . yielded finally to my persuasion for a considerable concession below the original demands of the employees . . . " and that he was ". . . now endeavoring to get Mr. Sullivan [the road's representative] to join in the award" (Records, U.S. Board of Mediation and Conciliation, File No. 33). In the Georgia and Florida Arbitration (1914), under the Newlands Act, the employees requested a twenty-two per cent increase and received a little over ten per cent. The increase was based on the desire of the board to standardize the rates on this road with those of other roads in the vicinity, the rates of which were found to be about fifteen per cent higher than those on the Georgia and Florida (Georgia and Florida Arbitration (1914), Report of Board, pp. 5, 6, 12).

[1] An important exception is Mr. M. A. Knapp, of the U.S. Board of Mediation and Conciliation, who stated, in an address before the National Association of Railway Commissioners, that compromise was the proper method in arbitration (*Railway Age Gazette*, Vol. XLV, No. 21, pp. 1193–1194).

[2] *Labour Gazette* (Canada), June, 1907, p. 1410.

award would not be a compromise, but in the nature of a judgment or decree of the court.[1] The employees have registered their disapproval of compromise decisions both in the course of arbitration proceedings [2] and in minority reports appended to the awards.[3] Employers, too, have emphasized the necessity of basing wage decisions on some principle of reasonableness and fairness.[4] In 1913 the railways in the Eastern District refused for a considerable period to arbitrate their dispute with the firemen under the provisions of the Erdman Act, partly on the ground that the award would of necessity be a compromise, and thus work to their disadvantage.[5] Their attitude was probably the same as that of a recent investigator who stated, ". . . It is not absolutely certain but that in exceptional cases a strike or lockout is a more wholesome culmination of an aggravated dispute than a series of temporizing and unsatisfactory compromises." [6]

[1] Eastern Firemen's Arbitration (1913), Proceedings, p. 2492.

[2] *Ibid.*, Proceedings, p. 2375.

[3] Eastern Engineers' Arbitration (1912), Report of Board, p. 111; Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 58.

[4] *Ibid.*, Proceedings, p. 2056; Chicago and Western Indiana Railway and Belt Railway Co. Arbitration (1913), Proceedings, Vol. II, pp. 1341–1342.

[5] Eastern Firemen's Arbitration (1913), Supplementary Report of the International President, Concerted Movement (1913), p. 38.

[6] Victor S. Clark, "Canadian Industrial Disputes Investigation Act of 1907," Bulletin, U.S. Bureau of Labor, No. 86, p. 3.

The justification for these opinions becomes apparent when the effects of decisions based on compromise are considered. In the first place, employees are encouraged to make frequent demands for wage increases, since they are practically certain that at least a part of their requests will be granted. The demands made, also, are generally far in excess of what can be supported on reasonable grounds; and naturally so, because the employees, knowing in advance that their requests will be cut in half, make their demands double the amount which they really expect to receive.[1] The employers, on the other hand, knowing the usual outcome of disputes submitted to arbitration, generally agree to arbitrate only as a last resort, and then are determined to concede the minimum amounts although they may be convinced of the justice of the employees' claim to a certain increase in wages. The frequency and extravagance of the employees' demands serve to increase the danger of an open breach in the relations of the two parties with consequent interruption to the processes of production and injury to the public. Compromise decisions also render the expenditures of both sides, for the collection of data and the pay-

[1] Eastern Engineers' Arbitration (1912), Report of Board, p. 101; Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 2056; Bulletin, U.S. Bureau of Labor, No. 98, p. 176.

ment of statistical experts for the preparation of exhibits illustrating the principles underlying their agreements, a useless extravagance and waste. If the arbitrator in order to reach a decision has simply to divide the difference between the maximum demands of the men and the minimum concessions of the employer by two, he will scarcely need thousands of pages of statistical tables, diagrams, and evidence of witnesses showing the rise in the cost of living, the increase in productive efficiency, and the effect of various mechanical appliances.

The most serious count against a compromise award, however, is its unjust character. It is not based upon any adequate investigation of the facts nor upon any inquiry into the relative merits of the arguments presented by the two sides in support of their claims. No attempt is made to determine whether the employees are justified in requesting an increase or the employers in refusing to agree to an advance in wages. Such a decision effects no real settlement, for if a reason for a certain increase in wages existed in the first instance, the same reason exists after a part of the proper increase has been granted.[1] The adjustment settles nothing definitely; it

[1] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 531.

merely postpones further action on the principle involved until after the expiration of the time limit set in the award. Both employers and employees feel that they have been unjustly dealt with, and return to work, hostile to each other and disinclined to refer further disputes to peaceful settlement. The piling-up of compromise on compromise results in a haphazard, unscientific wage system unsatisfactory to all concerned; for the employer is paying a certain wage without any knowledge of why he is paying that amount except that he is obliged to, and the employee is receiving his wage, although certain that he is worth more, but unable to force a larger amount from his employer.

In the preceding paragraphs an attempt has been made to show that the possibilities of arbitration have not been realized on account of the use of the principle of compromise in arriving at wage awards; that this principle is almost universally condemned; and that this condemnation is justified by a consideration of the evil effects of compromises in arbitration proceedings. If this attempt has been successful, it is evident that the method of adjustment by compromise must be abandoned, either by some organic change in arbitration laws or by some alteration in the method of their application.

The seeming inevitableness of compromise decisions has been ascribed to various causes — the short period of time within which the arbitrators must render a decision, the heavy responsibility placed upon the single neutral arbitrator, the ignorance of the impartial member of the board concerning the details of the industry involved, and so on. The fault lies, however, not so much with the specific details of the various laws, as with the lack of some definite, fundamental principles to which arbitrators may turn as bases for their wage decisions. The first question which arises in an arbitrator's mind is: What is the fair wage for this particular kind of work, or what are the just and reasonable grounds for an increase in the wages of this class of employees? If there existed some generally accepted principle of a fair and reasonable wage and some definite basis of wage advance, the task of the arbitrator would be much lightened, for he would be able to apply these general principles to the particular facts in the dispute and arrive at an equitable decision. This urgent need has undoubtedly been brought home to every one who has had any experience in arbitration proceedings. The writer of a recent article on the Australian industrial courts stated that one could not help being impressed with

the bewildered search of the courts for guiding principles.[1] The statement of the Eastern Engineers' Board (1912) is fairly typical of the conclusions reached by all wage boards: "Possibly there should be some theoretical relation, for a given branch of industry, between the amount of the income that should go to labor and the amount that should go to capital; and if this question were decided, a scale of wages might be devised, for the different classes of employees, which would determine the amount rightly absorbed by labor. It may be that in the future some such solution will be worked out for the various industries; and if so, the income of the railroads could be so apportioned. Thus far, however, political economy is unable to furnish such a principle as suggested. There is no generally accepted theory of the division of income between capital and labor." [2]

It is true that the study of economics has not resulted in an accepted solution of the wage problem; some economists have gone so far as to state that the determination of a fair and equitable wage is an impossibility. One who has had wide experience in the settlement of railway disputes in the United

[1] G. A. Beeby, "Artificial Regulation of Wages in Australia," *Economic Journal*, Vol. xxv, No. 99, p. 323.

[2] Eastern Engineers' Arbitration (1912), Report of Board, p. 47.

States is authority for the assertion that there is no right or wrong about wages.[1] In an address before the American Economic Association, Dr. F. H. Dixon said: "As a matter of fact the situation is hopeless, and will remain so, as long as we delude ourselves into thinking that we can under present economic conditions find a basis for wages in any theory of ultimate reasonableness. It may be that we are not merely chasing a will-of-the-wisp when we are hunting for a reasonable wage, but we are at any rate seeking the unattainable." [2]

The situation may be hopeless, but arbitration, without the application of some generally accepted principle of wages in the awards, will continue to be a mere compromise method, accompanied by manifold evils and incapable of effecting an equitable settlement of any wage dispute. If it be agreed that the determination of principles of fair wages and of wage advance will aid in securing better results in arbitration procedure, search for a principle of fair and reasonable wages may not be abandoned. Final solution of the wages problem may never be reached; but continuous and energetic effort must be directed toward a nearer approach

[1] *Railway Age Gazette*, Vol. XLV, No. 21, pp. 1193–1194.

[2] Proceedings of the American Economic Association, 1914, Vol. XXVII, pp. 264–265.

to a reasonable and just division between employer and employee.

It is the purpose of the following chapters to present a study of the principles of wage determination and of wage increase advanced by the employees and employers in the course of arbitration proceedings. The contentions of these two parties are likely to show extreme bias, but it is to be expected that their arguments, tempered by the findings and reasoning of arbitration boards, will suggest some fundamental principles which may serve as the basis of a fair and reasonable wage or of a just principle of wage increase. There is no richer field for such a study than the disputes settled by arbitration under the Erdman [1] and Newlands [2] Acts in the United States and by the boards of conciliation and investigation appointed under the Canadian Industrial Disputes Investigation Act.[3] Since the first-named laws apply only to railways, all those disputes involving other industries which have been settled under the Canadian statute have been omitted in this study.

Thirteen arbitrations have been conducted under the provisions of the Erdman Act dur-

[1] U.S. Statutes at Large, Vol. xxx, pp. 424–428.

[2] *Ibid.*, Vol. xxxviii, Part i, pp. 103–108.

[3] 6–7 Edward VII, c. 20. For text and amendments see Eighth Report, Registrar of Boards of Conciliation and Investigation (Canada), 1915, pp. 321–354.

ing the fifteen years in which it was in force; seven under the Newlands Act up to June 30, 1914; and forty-five railway disputes involving wages under the Industrial Disputes Investigation Act from March, 1907 to June, 1915. In addition to these sixty-five cases, two others, the Eastern Engineers' Arbitration of 1912 conducted by special agreement between the employees and the railways, and the Western Engineers and Firemen's Arbitration of 1915, were included in the material used. The briefs, exhibits, and evidence of witnesses of the employees and employers, so far as such material was available, have been examined with a view to ascertaining the content of each principle advanced and the grounds upon which it is supported. The findings of the arbitration boards are then discussed, and an appraisal made of the opinions of the parties to the controversy in the hope of forming a judgment as to the reasonableness and fairness of the proposed principles of wages.

In these arbitration proceedings, four broad, general principles have been advanced as bases for wage determination — Standardization, the Living Wage, Increased Cost of Living, and Increased Productive Efficiency. These constitute the subjects of four chapters. The final chapter attempts to clear

up inconsistencies and to merge the conclusions of the preceding chapters into a homogeneous system. Of necessity, the result of such an attempt must be fragmentary and inconclusive; but the justification for the endeavor lies in the manifest need of some fundamental principles of wages which may be applied in arbitration proceedings.

THE ARBITRAL DETERMINATION OF RAILWAY WAGES

CHAPTER I

STANDARDIZATION

The standardization of railway wages — the uniform application of a standard rate of pay for a given grade of employment within a certain area — has been the principle most stubbornly maintained by the railway employees and the one which has been most influential in determining the present form of railway wage bargaining. The object of the standardization movement is to secure uniformity of compensation for similar service throughout a given area. This principle, therefore, is most conveniently treated under three headings according to the area in which the standard rate is to apply. The following sections deal successively with (I) System Standardization, (II) District Standardization, and (III) National Standardization.

I. System Standardization

System standardization implies the application of a standard rate to a single road or to a number of roads combined into one system.

The advocacy of the principle of system standardization grew out of the desire of the employees to abolish individual bargaining. Under this method, railway officials paid applicants for positions according to their estimate of the labor and skill involved in operating a train upon a certain run or division. Thus, employees received one rate for main line service, another for branch line, another for a run through particularly hilly country, and still another for a route upon which traffic was especially heavy. In course of time a wage system was built up consisting of a multitude of diverse rates. This condition the employees regarded as intolerable, for the reason that men of a certain grade of employment and in the same service found themselves in many cases receiving rates far below those obtained by fellow workmen of the same grade and in the same service who chanced to be working on a different run or division. Out of this grew the demand for a standard rate for a given grade of employment in a certain service. This insures that an employee will receive as much for his effort and skill as any other workman of the same grade performing similar service, whether the work be done in the same locality or on another part of the road or system. Under system standardization, the multiplicity of rates

resulting from individual bargaining is abolished, and all employees who formerly were paid lower rates of pay receive at least the amount set as the standard.

The standard rate so set applies uniformly to all employees of a given grade in the same class of service, regardless of varying physical and traffic conditions on different parts of the same road. Thus no difference is to be made in the rate of compensation between main- and branch-line service, or between service on a single-track division with numerous curves and grade changes and a run on a level, four-track route. The employees claim that classification of runs on the basis of varying traffic and physical conditions does not take account in full degree of differences in efficiency required, and in the labor and responsibility involved in the various classes of service. The standardization requested by the employees by no means implies a single rate for all kinds of service; provision is made for the classification of service and the establishment of a separate rate for each, and also, in the case of certain grades of employment, for a sub-classification of service according to some criterion which will insure greater pay where greater labor and responsibility are involved.

The form of standardization proposed by the employees is well illustrated by the re-

quests submitted in the Eastern Engineers' Arbitration of 1912. Railroad service was classified into passenger, through freight, — including mine, work, wreck, pusher or helper, milk, roustabout, and circus service, — local freight, switching, and belt line. Instead of five rates for these services, sub-classification resulted in a total of twelve rates. For instance, in through freight service, engineers operating locomotives with a cylinder diameter of twenty inches or less were to receive $5.25 per one hundred miles or less, ten hours or less; from twenty to twenty-four inches or over, excepting Mallets, $5.75; and Mallet type of engines, $7.[1] In the recent concerted movement by the engineers and firemen in the West, weight on drivers, instead of cylinder diameter, was urged as the proper criterion of sub-classification, on the ground that driver weight was a more accurate index of tractive power than cylinder diameter, and, therefore, more exactly reflected differences in efficiency, labor, and responsibility resulting from the operation of larger locomotives.[2] The conductors and trainmen make no attempt to establish a graduated standard, contenting themselves with a simple classification of service.

[1] Eastern Engineers' Arbitration (1912), Report of Board, pp. 6–7.

[2] Western Engineers and Firemen's Arbitration (1915), Employees' Brief, pp. 14–15.

In the application of system standardization to the employees in a certain grade of employment, the men naturally desire the removal of low spots in the wage schedule without a corresponding decrease in the rates of those already receiving above the standard. This is accomplished by the insertion in their demands of a so-called "saving clause," an article providing that existing rates of pay that are more favorable to the employees than those proposed in the new schedule shall be retained. The men usually attempt to secure the incorporation of this clause in the agreement to arbitrate, and have come to regard it as so well established and long accepted that it should be included without question.[1] The employees base their claims for the saving clause on precedent [2] and on their restraint in not demanding the highest

[1] In a preliminary meeting held prior to the Eastern Conductors and Trainmen's Arbitration in 1913, the roads attempted to secure the adoption of an article providing that the rates and rules awarded in the coming proceedings should supersede rates and rules then in effect which were in conflict therewith. This attempt to render the saving clause inoperative was firmly and successfully resisted by the representatives of the employees. In the arbitration proceedings, when the question of the saving clause came up, the employees' arbitrators refused to vote on the ground that there had been an understanding with the government mediators that the saving clause articles were not to be submitted to arbitration. See *Quarterly Journal of Economics*, February, 1914, p. 365; Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, pp. 32–33, 59.

[2] Eastern Engineers' Arbitration (1912), Employees' Brief, p. 43.

rates in existence as the standard rate.[1] It is further maintained that the high rates should be retained, for their existence is a result of a low rate or some other concession elsewhere, and it would be manifestly unfair to remove an advantage gained in this manner.[2] The employees assert, too, that there is nothing in the saving clause incompatible with the theory of the standard rate, for a standard is a rate below which the employer must not pay any of his men, but above which he is expected to compensate those men, who, on account of greater efficiency, deserve payment above the standard.[3]

In reply to the demands of the employees for the establishment of system standardization, the railways contend that the standard, being a uniform rate applicable to all the employees of a given grade, can be applied only where uniform conditions exist.[4] Physical and traffic conditions cannot possibly be made uniform, and therefore it is unfair to the men to attempt the application of a standard rate. The railways hold that the differences be-

[1] Western Engineers and Firemen's Arbitration (1915), Employees' Brief, pp. 3–4.

[2] Eastern Engineers' Arbitration (1912), Employees' Brief, p. 44.

[3] *Ibid.*, p. 45; Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 4.

[4] Eastern Firemen's Arbitration (1913), Railways' Brief, p. 15; Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 9576–9577.

tween main and branch lines, between mountainous and level grades, routes with heavy and light traffic, etc., should be reflected in the wages received by those working under these varying conditions.[1] A single rate, applicable to all employees of one grade, regardless of the local conditions affecting their service, would clearly work to the men's disadvantage.[2]

The railways assert, also, that the standard, because it is a uniform rate, is "subject to the criticism that it fails to distinguish efficiency from inefficiency, takes away from the employee the incentive to exert himself beyond the unavoidable minimum, and thus stifles competition of labor with labor, greatly increasing the cost of production." [3] The saving clause, however, which aims to retain rates higher than the standard and tends to lessen the uniformity so vehemently criticized by the railways, is strongly condemned on the ground that it is inconsistent with the

[1] Eastern Engineers' Arbitration (1912), Railways' Brief, p. 25.

[2] For a detailed account of the objections to standardization, see Cunningham, "Standardizing the Wages of Railroad Trainmen," *Quarterly Journal of Economics*, November, 1910, pp. 139–160. The railways have also objected to the standard rate on account of the difficulty of its application. Since these difficulties are peculiar to railway service, and do not affect the principle of the standard, the consideration of them is omitted in this paper. See Eastern Firemen's Arbitration (1913), Railways' Brief, pp. 13–14; Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, pp. 11–12.

[3] Eastern Engineers' Arbitration (1912), Railways' Brief, p. 13.

plea for uniformity. The roads claim that the establishment of a standard implies the "equalization of dissimilar rates"; [1] and therefore, if the low rates in the wage schedule are raised to the standard, then similarly the high rates should be lowered. Since the saving clause permits the raising of the low rates without a lowering of the high rate, it prohibits any equalization of dissimilar rates and defeats the uniformity desired by the employees.[2] In other words, the railways condemn a standard rate because they consider it to be a single uniform wage, and then they condemn a provision which tends to lessen uniformity by retaining certain payments above the standard. A more convincing argument against the saving clause is found in the assertion of the railways that it insures the employees against any loss in a wage dispute, and therefore, by encouraging numerous and excessive demands for increases, fosters agitation and strife.[3]

American arbitration boards have been

[1] Western Engineers and Firemen's Arbitration (1915), Report of Board, p. 26.

[2] Eastern Engineers' Arbitration (1912), Railways' Brief, pp. 13–15; Eastern Firemen's Arbitration (1913), Railways' Brief, pp. 3, 56, Proceedings, p. 2473; Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, pp. 47–48; Proceedings, p. 2009.

[3] Eastern Firemen's Arbitration (1913), Railways' Brief, p. 56; Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, p. 48.

practically unanimous in their approval of the principle of system standardization. In all the large concerted movements and in disputes involving only one road, the service classifications suggested by the employees have, with few exceptions, been adopted and at least one standard rate applied to each class of service. In this manner most of the complicated differences in rates of compensation for similar service have been removed, the boards evidently recognizing the disadvantages attending a wide diversity of rates. It is impossible to say, however, whether the establishment of the standard rates was prompted more by the superior weight of the employees' arguments than by the inability of the boards to determine the rate commensurate with the labor involved on each particular run. Thus, although the Eastern Engineers' Board of 1912 held that " . . . local variations in the character of the service should be reflected, to a reasonable extent, in the rates of pay, . . ." and that there was no warrant for imposing one rate without regard to local differences on the same road, it found itself unable " . . . to adjust the compensation for each class of service and each kind of engine for each of the roads . . . ,"[1] and

[1] Eastern Engineers' Arbitration (1912), Report of Board, pp. 23–24, 77–78.

awarded a single standard rate for the various classes of service. It may be said that the attitude of the boards is a recognition of the fact that a multiplicity of rates may become a hardship to a number of employees, and therefore, as far as possible, a standard has been awarded. They have refused, however, to commit themselves by definite statement to the principle that, regardless of varying physical and traffic conditions on the same road, a standard rate should be applied uniformly to all the employees of a given grade in a given service.

In regard to the form of the standard rate, most of the boards in those cases involving engineers and firemen have established the graduated standard, — the criterion, as a rule being weight on drivers. The Eastern Engineers' Award of 1912, in which no graduated standard was granted, is an exception. The recognition of the demands of the employees in this respect may be regarded as an attempt to provide for a definite payment above the standard to compensate for greater efficiency, labor, or responsibility. The economic handling of a large locomotive requires more efficiency in firing and in operation than is necessary in the case of a small one, and the increased length of the train hauled places more responsibility upon the

crew. Without a graduated standard, it is likely that the railways would make little difference in compensation above the standard according to the efficiency, labor, and responsibility involved in the operation of larger locomotives. The boards, therefore, have awarded the graduated rate in order to counteract this unmistakable tendency.

The boards have dissented with one voice from the position of the railways that the standard rate should be established by an increase in the low rates in the schedules and a corresponding decrease in the high rates. In granting the saving clause, recognition has been given to the employees' claim that the standard rate is a minimum only and never a maximum and that there is nothing to prevent the roads from paying wages above the standard. It is recognized that standardization is always an upward movement, accomplished by increasing lower rates to an ever rising standard, those rates higher than the standard being retained. In the past, however, the privileges of the saving clause have been abused at times by a combination of the newly awarded provisions with the more favorable existing conditions, resulting in a still further increase of some of the high rates. Several of the boards have endeavored, therefore, to define the meaning of the saving

clause more clearly. The Eastern Firemen's Board of 1913, for instance, compelled the employees to accept the amended rates and conditions, or to retain the old rates and conditions; and the Eastern Conductors and Trainmen's Award of the same year provided that the earnings of the employees concerned should not be diminished by the terms of the award, but also that earnings should not ". . . be increased above what the higher rates of pay and the conditions that were better antecedent hereto guaranteed them, by a combination of the rates herein established with the conditions antecedent hereto or *vice versa*." [1]

II. District Standardization

District standardization is the application of a standard rate uniformly to all railways within a certain district. The desire for the general application of this principle arose from the wide diversity of rates and working conditions which existed on different roads throughout the United States. Negotiations between official representatives of each railroad and committees representing the employees of that road might result in system standardization, but collective bargaining on

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 53.

this scale could not abolish the wide differences in rates between the various roads within the district. Strength of organization, large membership and aggressive methods, combined with a measure of liberality on the part of employing officials served to give employees on many roads higher wages and more favorable working conditions than those on other roads where wage bargaining was not carried on under these conditions.[1] The natural result of this system of bargaining was a great diversity in railway wage rates throughout the United States. Some roads recognized only two types of service, passenger and freight; others sub-classified freight service into local and through freight; some included switching service as a separate category. Again, roads adopted various bases of pay, by mileage, trip, day, or month. Engineers were usually paid according to the size of the locomotive operated; but even here no uniformity prevailed, for compensation varied according to several criteria, total weight, weight on drivers, or diameter of cylinder.

The railway employees sought to end this chaotic condition of affairs by extending the

[1] Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 2; Eastern Firemen's Arbitration (1913); Supplemental Report, International President, Concerted Movement (1913), Employees' Brief, pp. 1192–1193.

standard rate over a wider area than the single road or system; they planned to establish uniformity on all the roads in a certain district. In 1902 the employees on the railways west of the Mississippi River inaugurated the movement for district standardization. Prior to this date, approximate uniformity had been secured merely by separate negotiations with the officials of individual roads. Further steps toward standardization and a higher rate were halted by the contention of the roads that they were already paying as much as their neighbors and could not be expected to set up a new standard.[1] The check was temporary, however, for the chief executives of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen conceived the idea of a concerted movement of all members of their organizations west of the Mississippi. It was for the specific purpose of encouraging district standardization that concerted wage bargaining was devised.[2] A meeting at Kansas City in June, 1902, resulted in the formation of the Western Association of General Committees of the Order of Railway Conductors and the Brotherhood of Railroad Trainmen. This Association drew up a schedule of rates, which, after

[1] Proceedings of the Railway Conductors, 1903, pp. 18 ff.
[2] Eastern Firemen's Arbitration (1913), Proceedings, p. 2356.

being almost unanimously approved by the rank and file of the organizations, was submitted simultaneously to the management of the separate roads. The first roads on which a settlement was concluded were the Missouri, Kansas and Texas, the Missouri Pacific, the Frisco, and the St. Louis Southwestern, and these rates were gradually adopted by separate agreement on the other roads west of the Mississippi.[1]

In the next concerted movement in the West conducted by the Brotherhood of Locomotive Engineers in 1906, a new plan of dealing with the railways was tried. Instead of effecting separate agreements with the individual roads, settlement was made for all the railways in one series of negotiations between the representatives of the employees and a Conference Committee of General Managers, appointed by the railways and given power to arrange a schedule applicable to the whole territory.[2] With a few exceptions, this plan has been followed in succeeding concerted movements. The result of these wholesale wage negotiations in the West was virtual standardization of wages and working conditions of the conductors and trainmen on a distinct basis. The railways were less in-

[1] Proceedings of the Railway Conductors, 1903, pp. 18 ff.; *ibid.*, 1905, p. 10 ff.

[2] *Ibid.*, 1907, p. 71.

clined to refuse the demands of the employees than they had been when individual roads only were concerned. By this new method of wage bargaining, the employees brought the full force of their organization in a vast territory to bear upon the railways, and the latter, fearing a general tie-up of traffic by a strike and knowing the effect which this would have upon the public, were led to accede to the men's demands.

The success of the Western Conductors' and Trainmen's concerted movement in 1902 assured the adoption of this method in future negotiations. The Engineers and Firemen soon fell into line, but the Conductors and Trainmen took the lead in the formation of associations of general committees in other sections of the country. The question of a Southern Association of these two organizations was discussed as early as November, 1903, but it was not until a meeting in Atlanta, in February, 1905, that definite action resulted in the organization of the Southern Association.[1] The first Eastern Association of General Committees was organized by the Conductors and Trainmen in a meeting at Buffalo in March, 1907, but a concerted movement for increased wages was deferred on account of the prevailing business depres-

[1] Proceedings of the Railway Conductors, 1905, pp. 79–80.

sion.[1] At the present time, all the train-service unions in the United States [2] have machinery for the formation of Associations of General Committees or Federated Boards to conduct concerted wage movements. The Conductors and Trainmen usually unite in their movements, and recently the Engineers and Firemen have laid aside their former animosity, and have agreed upon a plan of federation,[3] which was put into practical operation in their Western concerted movement early in 1915. Although there have been numerous attempts to federate the four train-service brotherhoods in one concerted movement, only once has this been accomplished, when in 1908, at the request of the Western railways, representatives of the four organiza-

[1] Proceedings of the Railway Conductors, 1907, pp. 72–73; *ibid.*, 1909, pp. 89–96.

[2] The three railway districts recognized by the Interstate Commerce Commission are defined by the Eastern Engineers' Arbitration Board (1912) as follows: "The Eastern District comprises that portion of the United States bounded on the West by the northern and western shores of Lake Michigan to Chicago, thence by a line to Peoria, thence to East St. Louis, thence down the Mississippi River to the mouth of the Ohio River, and on the South by the Ohio River from its mouth to Parkersburg, West Virginia, thence by a line to the southwestern corner of Maryland, thence by the Potomac River to its mouth. The Southern District comprises that portion of the United States bounded on the north by the Eastern District, and on the West by the Mississippi River. The remainder of the United States, exclusive of Alaska and of island possessions, is included in the Western District" (Eastern Engineers' Arbitration (1912), Report of Board, note, pp. 12–13).

[3] Joint Agreement of May 17, 1913; Constitution of Brotherhood of Locomotive Firemen and Enginemen, 1913, p. 157.

tions signed an agreement concerning the application of the Federal Hour Law.[1] At this writing, the train-service employees are considering a nation-wide, federated movement to secure a universal eight-hour day and time and a half for overtime.

Since the inauguration of the concerted movement in the Western District in 1902, eighteen such movements have been conducted by the train-service organizations, nine in the West, five in the South, and four in the East.[2] Undoubtedly they have been of benefit to the employees both in removing the injustices attending the lack of standardization, and in raising wages and improving working conditions. The railways, too, have benefited, for the concerted movement, by making district standardization possible, has removed a source of irritation and ill-feeling between the employees and the railway managements. As to the future, it is safe to say

[1] Proceedings of the Railway Conductors, 1909, pp. 82–85.

[2] These eighteen concerted movements were as follows: (1902), Conductors and Trainmen in the West; (1906), Engineers in the West; (1907), Conductors and Trainmen in the West, Firemen in the West, Engineers in the South, and Conductors, Trainmen, Firemen, and Engineers in the South; (1908), Conductors, Trainmen, Engineers and Firemen in the West; (1910), Conductors and Trainmen in the West, Firemen in the West, and Engineers in the West, Conductors and Trainmen in the South, Conductors and Trainmen in the East; (1911), Engineers in the South; (1912), Conductors and Trainmen in the South, Engineers in the East; (1913), Conductors and Trainmen in the East; Firemen in the East; (1915), Engineers and Firemen in the West.

that movements involving sometimes as many as one hundred thousand men and costing thousands of dollars will not be undertaken upon trivial grounds.[1] Thus there will undoubtedly be a lessening in the number of demands for wage increases on petty and frivolous grounds; and the organizations and the railways, instead of wasting energy and money and threatening public welfare in numerous small disputes, may turn their attention to the settlement of such larger questions as the eight-hour day and the proper payment for overtime.[2]

The four train-service brotherhoods in the United States agree that within the Eastern, Southern, and Western Districts a standard rate should be applied uniformly on all the roads. This has been the chief contention of the employees in all concerted movements involving the roads within a district, and in those disputes involving only a single road, the employees have invariably claimed that they were not receiving the rate paid for the same service on other roads in that district.[3]

[1] Address of Hon. Seth Low before the annual meeting of the National Civic Federation in 1914, quoted in *The Railway Library*, 1913, p. 153.

[2] *The Railroad Trainmen*, September, 1914, p. 848.

[3] This claim was introduced in the Chicago and Western Indiana and Belt Railway Co. Arbitration; Chicago, Burlington and Quincy; Georgia and Florida; Coal and Coke; Denver and Rio Grande; Wheeling and Lake Erie, Wabash, Pittsburgh Terminal, West Side Belt Railway.

The employees point to the diversity of rates existing on different lines as one of the chief sources of disputes with the railways. The men on a certain road are bound to be discontented and restive if they know that their fellow workmen in the same grade of employment on a neighboring line are receiving a higher rate of pay.[1] Another disadvantage of a lack of uniformity, the men assert, is the absolute impossibility of making exact comparisons in wages from year to year. This is evidenced by the difficulty experienced by all arbitration boards in discovering just what has been the increase in wages in a given period of time.[2] The employees claim, also, that since a standard rate covering areas as large as the railway districts has been established with beneficial results in other industries, their demands may be based on precedent. Thus the firemen in the Eastern Arbitration of 1913 called attention to the peace and contentment existing among the miners, printers and building trades where a district standard is applied, in comparison with the discontent and unrest of the steel and textile workers.[3]

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7409.

[2] *Ibid.*, Employers' Brief, pp. 6–7; Eastern Firemen's Arbitration (1913), Proceedings, pp. 2358–2359.

[3] See also Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 3.

The employees maintain that the varying physical and traffic conditions on the different roads should not constitute a basis for the payment of various rates. It may be true, they hold, that physical conditions and traffic peculiarities differ as between individual roads, but it would be impossible to determine a separate rate of pay for each special condition. In the course of the development of the railways conditions are always changing. Grades may be leveled, additional tracks laid, curves straightened, passenger and freight densities may differ from year to year and from day to day. The attempt to determine the proper rates for each different condition, and to change them as the conditions change, the employees assert, is obviously absurd. The plan of fixing a standard rate governing an entire district may be illogical and its basis arbitrary, but "it is deemed the best devised and does substantial justice in a broader sense than any other system."[1] If the roads were allowed to fix rates on the basis of varying conditions, discriminations between the employees on different roads would surely follow. A standard rate in force on all the roads in a district is claimed to be the only equitable system.[2]

[1] Chicago, Burlington and Quincy Arbitration (1913), Proceedings, pp. 9789–9791.

[2] Western Engineers and Firemen's Arbitration (1913), Employees' Brief, p. 1.

Another phase of the employees' argument against the relation of rates and conditions concerns the ability of the separate roads to pay the standard rate. The brotherhoods assert that rates within the district should not be influenced by the relative wealth of the roads but that all should be required to pay the standards of the district whether their financial condition be prosperous or otherwise. The reasons upon which this position is based are manifold. In the first place, the employees hold that the efficiency of a workman of a certain grade employed on a prosperous road is just as great, his labor is equally onerous, and his risk and responsibility are the same as the efficiency, labor, and responsibility of a workman employed on a bankrupt line, and therefore that there is no justification for any difference in the wages paid.[1] Again, the employees maintain that just as the separate roads are obliged to purchase cars, coal, locomotives, and other equipment at a uniform price regardless of their varying financial conditions, they should be required to purchase their labor at a uniform price.[2] Further, it is not the custom in other industries to permit an unprosperous firm to pay wages below the standard. All employees are on the same level

[1] Western Engineers and Firemen's Arbitration (1915), Employees' Brief, pp. 4–5.

[2] *The Railroad Trainman*, February, 1910, p. 152.

in this respect.[1] In final support of their position, the employees refer to the numerous decisions of Federal courts in which it has been held that the inability of a road to pay dividends on its stocks and interest on bonds, or the necessity for the issuance of receivers' certificates to defray expenses of operations, is not sufficient cause for reducing wages below those paid on other lines in the vicinity for similar work.[2]

The railways oppose district standardization on the ground that rates cannot be disassociated from conditions and since conditions vary widely on different roads in such extensive territories as the railway districts, they maintain that rates cannot be made uniformly applicable on all the roads. The amount of compensation, the roads hold, is governed by the labor performed, the skill and efficiency required, the responsibility and hazard involved, the discipline necessary, the rapidity of promotion, and the cost of living.[3] These various elements depend, for the greater part, upon the physical conditions under which the labor is performed, the na-

[1] Eastern Firemen's Arbitration (1913), Employees' Brief, p. 1206.

[2] Eastern Engineers' Arbitration (1912), Employees' Brief, pp. 10–14; Eastern Firemen's Arbitration (1913), Employees' Brief, pp. 1206–1209; Western Engineers and Firemen's Arbitration (1915), Employees' Brief, pp. 4–5.

[3] Coal and Coke Arbitration (1911), Proceedings, p. 1012.

ture of the territory through which the line operates, which governs the length and difficulty of the runs, the number of tracks, curves, crossings, etc., the size of locomotives and trains, and the number of tons or passengers carried per train.[1] In so far as these conditions are similar on the different railways within a certain territory, the roads admit that the rates may properly be made uniform, for identical pay for identical service is just.[2] But it is impossible to make these conditions similar on all the roads, and therefore, where differences exist, they should be reflected in the rates of compensation.[3] District standardization can be accomplished only by fixing rates upon some arbitrary basis, and this will be done at the expense of justice and equity.[4]

The railways maintain, further, that the rate of compensation should bear some relation to the earning capacity of the different

[1] Georgia and Florida Arbitration (1914), Report of Board, p. 2; Coal and Coke Arbitration (1911), Proceedings, p. 1013; Eastern Firemen's Arbitration (1913), Railways' Brief, p. 7; Eastern Engineers' Arbitration (1912), Railways' Brief, pp. 7–8, 15–17.

[2] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7560; Eastern Firemen's Arbitration (1913), Railways' Brief, p. 15; Eastern Engineers' Arbitration (1912), Railways' Brief, p. 15.

[3] Wheeling and Lake Erie, etc., Arbitration (1913), Proceedings, pp. 309–310; Eastern Firemen's Arbitration (1913), Railways' Brief, p. 15; Coal and Coke Arbitration (1911), Proceedings, pp. 1011–1013; Eastern Engineers' Arbitration (1912), Railways' Brief, p. 15.

[4] Eastern Firemen's Arbitration (1913), Railways' Brief, p. 61.

roads, for, otherwise, uniformity would result in an undue burden upon the less prosperous lines. It is intimated that the standard rate demanded by the employees is determined by the ability of the more prosperous roads to pay and that the financially weaker lines are in danger of having their revenues so cut by the increase in wages as seriously to impair their credit and to force the suspension of dividends.[1] The railroad's representative in the Georgia and Florida Arbitration (1914) maintained that since the road concerned was not earning dividends, if the employees were to receive as a right what the employer did not earn, it would be a clear case of confiscation. The road would become insolvent and the stockholders would suffer.[2] The public also would feel the effect of the men's demands, for those sums from which money is deducted to replace rotten crossties, unsafe bridges and steel cars, and to give the general public safe and satisfactory service, would be diminished by just so much as the employees demanded.[3] Each individual road, therefore, should pay the wages which its financial standing permits, and in

[1] Eastern Engineers' Arbitration (1912), Railways' Brief, pp. 18–20.

[2] Georgia and Florida Arbitration (1914), Report of Board, pp. 8–9, 11.

[3] *Ibid.*, p. 9.

those cases involving a number of roads, the rate paid by each should be considered separately and should bear some relation to the road's financial capacity.

In addition to the above arguments against district standardization, the railways deny the employees' claim that other industries pay a standard rate in an area as large as the railway districts.[1] Everywhere there is a wide diversity in wages, and this fact, the railways claim, is sufficient reason for the boards to decline district standardization.

Railway arbitration boards have not taken any consistent stand on the question of district standardization from which a general statement as to their attitude can be made. The acceptance of the principle of district standardization is conditioned upon the acceptance of the employees' claim that rates should not be influenced by physical and traffic conditions peculiar to individual roads nor by the varying ability of separate roads to pay the standard. The Eastern Engineers' Board (1912) refused to take the employees' view, holding that it was improper to award the same rate of compensation without respect to differences on the roads in the Eastern District. The reasons given for this find-

[1] Eastern Engineers' Arbitration (1912), Railways' Brief, pp. 17–18; Eastern Firemen's Arbitration (1913), Railways' Brief, p. 7, Proceedings, pp. 2473–2474.

ing were that in no part of the country was this the practice on the railways and that the heavier traffic on certain roads undoubtedly made the labor more exacting and onerous.[1] In the Clark-Morrissey Award on the New York Central, the principle of district standardization was held to be generally advantageous, but some variations on account of conditions different from other railways were recognized and the rates awarded varied accordingly. On the other hand, the standards granted in the Eastern Engineers', Firemen's, and Conductors and Trainmen's awards, and in the Western Engineers and Firemen's Award, and made applicable to all the roads within those districts, seem to indicate that district standardization has been recognized, and if any variations in rates to accompany varying conditions on the different roads are permitted, the rates are not to be lower than the standard granted in these awards.

In disputes involving single roads the general attitude of the boards has been to award rates which will bring wages on the road in question to a level with those paid on neighboring lines. For instance, in the case of the Southern Railway *vs.* Maintenance of Way Employees (1913), the board resorted to

[1] Eastern Engineers' Arbitration (1912), Report of Board, pp. 23–24.

". . . a comparison with labor on other railroads where duties are the same and classifications nearly identical."[1] And, again, in the Georgia and Florida Arbitration (1914) the board held that the rates ". . . should conform as nearly as may be to the rates paid by the other roads for similar service in the same section of the country.[2] This has been the usual practice in Canada, although there have been exceptions.[3] In the case of the Grand Trunk Railway *vs.* Conductors and Trainmen (1910) the board stated that the men ". . . are justified in asking that roads in the same territory should standardize their rates of pay and their rules also so far as they may deal with like general conditions of service." [4] The chairman appointed in the case of the Canadian Pacific Railway *vs.* Maintenance of Way Employees (1914) held, similarly, that there was no reason why ". . . one equally capable member of the same brotherhood, doing the same work, should be

[1] Southern Railway Arbitration (1913), Report of Board, p. 14.

[2] Georgia and Florida Arbitration (1914), Report of Board, p. 2.

[3] The board, in the case of the Conductors and Trainmen *vs.* the Canadian Pacific Railway (1914), refused to grant a uniform schedule for the Prairie and Pacific divisions on account of ". . . the various peculiar existing conditions surrounding the service on the Prairie and Pacific Divisions, arising from the natural physical conditions, climatic conditions and the length of the train mileage and time allowed therefor . . ." (Report, Registrar of Boards of Conciliation and Investigation, 1915, p. 119).

[4] Grand Trunk *vs.* Conductors and Trainmen (1910), Report, Registrar of Boards of Conciliation and Investigation, 1911, p. 133.

paid less, or be under greater disadvantages in any way in his service than another simply because one happened to be employed on one railway and the other on another." [1]

In regard to the plea of individual roads that they are unable to pay, the findings of arbitration boards have been fairly uniform in favor of the employees' claims. The board in the Southern Railway case against the Maintenance of Way Employees, however, held that the road had fully established its inability to pay, and although an average rate was awarded, the board asserted that ". . . the fair rule would probably be to fix wages not at the highest nor even at the average rate, but at the lowest rate that could readily command the services that were needed." [2] This finding is an exception. In the dispute involving the switchmen on roads leading into Chicago, the roads claimed that the ability of each to pay should be considered separately, but the board overruled this point by the statement that ". . . this is a joint arbitration to which there are virtually two parties. . . ." The board went on to say that ". . . in its findings it has endeavored to adapt itself to the average of the lines, rather than upon either extreme. . . . We

[1] Canadian Pacific *vs.* Maintenance of Way Employees (1914), in *Labour Gazette* (Canada), February, 1914, p. 907.

[2] Southern Arbitration (1913), Report of Board, p. 6.

are also of the opinion that those companies must be regarded as able to pay operating cost, including, of course, just and reasonable wages to the class of employees parties to this arbitration." [1] The Georgia and Florida Board hold that, although the road was not earning enough to meet its expenses, "the employees have the first claim on the earnings of a road for a reasonable wage to be determined not by the financial condition of the company, but by the rates paid by other roads in the same section of the country for the services." [2]

In the large concerted movements the roads have always been considered as a whole, the boards refusing to permit the condition of individual roads to influence the payment of a standard rate throughout the district. The position of the board in the Eastern Engineers' Arbitration (1912) is typical. Upon investigation it was found that the New York Central, New Haven, Pennsylvania, Baltimore and Ohio, Reading, and Erie controlled directly eighty per cent of the mileage operated in the Eastern District, and that some of the independent roads were indirectly controlled through a system of interlocking directorates. A dependent road, while unprofitable

[1] Chicago Switchmen's Arbitration (1910), *Railway Age Gazette*, Vol. XLVIII, No. 14, pp. 960–961.

[2] Georgia and Florida Arbitration (1914), Report of Board, p. 4.

in itself, might be profitable to the system to which it belongs by serving as a valuable feeder to a larger line. For these reasons the arguments of the less prosperous roads as to their inability to pay were held to be somewhat weakened. The board maintained that it was unable to state with any certainty whether the less prosperous roads were able to pay, but it eliminated the claim of the roads, and applied a standard rate uniformly to profitable and unprofitable roads.[1]

III. National Standardization

Railway employees in all sections of the country are committed to the policy of district standardization; the employees in the Eastern District, however, entertain the ideal of national uniformity, the payment of a uniform standard rate throughout the United States. In the three concerted movements conducted by the Eastern Engineers, Firemen, and Conductors and Trainmen since 1912, the employees have urged the adoption of a rate which would reduce or entirely abolish the differential in wages existing in favor of the West over the East. Until 1910 the wage scale in the South had always been less than in the East, and in the West, train-

[1] Eastern Engineers' Arbitration (1912), Report of Board, pp. 25–46.

service employees have always enjoyed a differential over those in the other railway districts. According to information obtained by the Eastern Conductors and Trainmen's Board, engineers in the West in 1913 received a wage 5.3 per cent in excess of that paid to the same class in the East; firemen, 7.3 per cent; conductors, 16.1 per cent; and brakemen 7.1 per cent.[1] The employees in the East propose to abolish these differentials for they consider that the more favorable position of the Western men is due to the earlier and more aggressive activity of the employees in the Western District, and not to any essential differences between the districts.

The employees base their claim for national standardization on the ground that railroad service, regarded from a purely technical point of view, is practically identical the country over, with the exception of the mountainous districts in the West, where permanent natural conditions justify the payment of higher compensation. They assert that the equipment handled by the employees has been standardized to a great extent; that motive power specifications and conditions of gradient and curvature are

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 8.

virtually the same; and that employees are held responsible under the same code of discipline.[1] Since there is uniformity of operation, of requirements, and of labor existing throughout the East and West, there is no justification for the payment of a favorable differential in the latter district. The employees claim, furthermore, that living conditions in these two areas are practically identical. There is little difference in the cost of necessary commodities; while the environment, that is, climatic conditions and opportunities for education, for religious observances, and for recreation, is practically the same East and West.[2]

Indeed, the employees claim, if any district enjoys a favorable differential, it should be the East; for some of the conditions surrounding railroad service are less desirable in that district than in any other section of the country. Thus the Eastern Engineers point out that the traffic in the East is more congested, that there are more block signals to look out for, and more requirements as to time schedules and high speed.[3] The Conductors and Trainmen assert also that the

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, pp. 11–12; Proceedings, 1915, pp. 872–874.

[2] *Ibid.*, Proceedings, pp. 1910–1914.

[3] Eastern Engineers' Arbitration (1912), Employees' Brief, p. 22.

average time on duty is longer in the East than in the West.[1]

Finally, the Eastern employees claim that the wages paid in other trades do not differ materially East, West, and South. They assert that the railways' exhibits showing that higher wages are paid in the West than in the East are inconclusive, since the figures given fail to make allowance for the lowering of wages in the East in certain trades due to the strong competition of foreign labor. Wages in the East in those industries employing foreign labor may be lower than in the West, where there is little competition with foreigners; but it would be unfair to allow this fact to affect the compensation of railway labor, which is almost entirely native-born throughout the country.[2]

The railways in the Eastern District are strongly opposed to the application there of the Western rates. They maintain that if earnings are considered instead of rates, the differences in wages between the East and West are not so wide as the employees claim. Thus, it was pointed out in the Eastern Firemen's Arbitration that there is more constructive mileage in the East than in the West, since in the latter district the railways are

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 13.

[2] *Ibid.*, Employees' Brief, p. 25.

able to get longer runs within the minimum day.[1] Schedule rates in the West, however, the railways admit, are higher and always have been, and this very fact is sufficient reason for maintaining the differential between the two districts.[2] To strengthen this position, the roads claim that in other industries it is the practice to pay higher wages in the West than in the East, and there is no justification for the railways overturning precedent and establishing national uniformity.[3]

Objection is made also to the use of the Western rates as a model for the Eastern. The railways claim, on the strength of the employees' statement, that the high rates existing in the West are a result of the aggressiveness of the Western employees: "Rates that have been established by coercion cannot justly be cited as a precedent and therefore, the rates in the West cannot be used as a basis upon which to build the entire rate structure of the Eastern Territory. The equity of the rates in the West has not been touched

[1] Eastern Firemen's Arbitration (1913), Proceedings, p. 2460; Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, p. 25.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 2047; Eastern Engineers' Arbitration (1912), Proceedings, p. 1969.

[3] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Reply Brief, p. 4.

upon by the employees, much less proven, and without such proof their value as a determining factor in fixing rates for the Eastern District is nil." [1]

The strongest argument of the railways against national standardization is connected with the lack of agreement between the employees in the Eastern and Western Districts regarding uniform rates. The Western employees seem to consider that the higher rates paid them are just, and insist that the differential between the two districts be maintained. The roads state that after the general increase in wages in the East in 1910, a move was immediately started in the West based on the argument that the Eastern rates had been raised and therefore the Western rates should be similarly increased so that the employees might restore the former differential over the East.[2] There is every indication, the roads maintain, that this practice of using the increases in one district as a ground for increases in another will be continued, and as long as the employees do not agree upon the question of national standardization, that system is unattainable.[3] This

[1] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, p. 9.

[2] *Ibid.*, Railways' Brief, p. 8; Proceedings, pp. 1968–1970.

[3] Eastern Firemen's Arbitration (1913), Proceedings, p. 2459. Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 64.

"endless chain" method of securing wage increases constitutes a real hardship to the railways, and is neither logical nor just.[1]

No arbitration board in the United States has given unqualified support to the principle of national standardization. The awards in the Eastern Engineers', Firemen's, and Conductors and Trainmen's Arbitrations failed to secure for the Eastern train-service employees the rates current in the West, although the increases allowed served to reduce the differential between the two districts. The Eastern Conductors and Trainmen's Board (1913) gave serious attention to national standardization, summing up its attitude in the statement that it could not be controlled in its findings by the argument for standardization, although it might be influenced by it.[2] The extent of this influence is shown by the action of the board in raising the rates in the Eastern District to the level of those in the South, which, on account of the concerted movement of the Conductors and Trainmen in that territory in 1912, had been advanced beyond the Eastern rates.[3] The board held that uniformity in rates of pay in the East and South was justifiable

[1] Eastern Firemen's Arbitration (1913), Proceedings, p. 2056.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 15.

[3] *Ibid.*, Report of Board, pp. 16–17, 35.

because wages in other industries in these two districts were practically the same, and, further, that it was "... an advantage worth the cost even partially to eliminate from the wage problem of the railroads one of the differentials now existing." [1] As to uniformity between the East and West, the board stated that this was at present impossible, because the differential affecting conductors and trainmen between the two districts was very large; wages in other industries were still higher in the West than in the East; and it was not clear that the policy of national standardization favored in the East was favored by the Conductors and Trainmen in the West.[2] In regard to the last reason for refusing national standardization, the board stated that "the organizations concerned should formally and officially commit themselves to the policy of standardization between the East and West. In the absence of such an accepted policy, were this board to place the pay of conductors and trainmen in the East, as they are asked to do, on the Western basis, such an increase of the wage scale in the East might serve . . . to bring about a new movement in the West to secure the old differential as against the East." [3]

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 37.

[2] *Ibid.*, Report of Board, p. 15.

[3] *Ibid.*, p. 4.

It was held, however, that national standardization would be of advantage to the employees, railways, and public, and, therefore, that progress should be made in that direction as fast as possible. Interstate railroads, the board stated, constituted national public utilities, and as such, would be obliged in the end to follow the practice of the Railway Post-Office Service of paying uniform rates regardless of the district.[1] Finally, the board suggested that before any further steps were taken for the establishment of national standardization, some public authority authorized by Congress should make an independent inquiry as to whether there existed any substantial reason for a wage differential between the West and East based on territorial conditions.[2]

The attitude of the employees, employers, and arbitration boards toward system, district and national standardization having been outlined, the remainder of this chapter will be concerned with a discussion of the validity of the principle of standardization and an estimate of the possibility of its application in future arbitration proceedings.

It is unnecessary to enumerate in detail

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, pp. 15–16.

[2] *Ibid.*, Report of Board, p. 5.

the advantages of system standardization; the payment of standard piece scales within a local area is the practice in many trades, and also upon many railways, and these applications of the principle demonstrate its practicability and success.[1] The chief objection is that the standard rate tends to become the maximum rate paid, and that this tendency results in a uniform wage to efficient and inefficient workmen. It is true that the existing rates higher than the standard retained through the saving clause are merely temporary; and that the upward movement of standardization will ultimately result in the gradual rise of the present standard to the maximum now existing, thus providing one uniform standard for all employees of a certain grade in a given service. Under such a system of wage payment, it is certain that some more capable men will receive the same rate of compensation as that paid to inferior employees. But there is likely to be even more unfairness where lack of a definite level below which employers may not grade their men permits the payment of insufficient wages.

On the railways, where mileage is the basis of payment, the danger of uniformity in com-

[1] D. A. McCabe, "Standard Rate in American Trade Unions," Johns Hopkins University Studies in Historical and Political Science, Vol. xxx, pp. 120–128, 141–142.

pensation is largely obviated by giving more advantageous runs to older and tried employees. Furthermore, the graduated standard rate proposed by the men and awarded by a number of boards provides for a definite payment above the standard to those operating locomotives which require greater labor in handling and involve more risk and responsibility. Weight on drivers, the criterion ordinarily awarded by the boards, has been criticized by the railways on the ground that it is not a proper index of tractive power. Any criterion selected to measure increased efficiency, labor, or responsibility attending the operation of larger locomotives is certain to be more or less arbitrary. The important consideration appears to be uniformity of application and continued use of a certain criterion, once it has been selected. The claim of the railways, therefore, that the standard results in a uniform wage must be disallowed, for the graduated standard assures definite payment above that level, and thus refutes one of the most serious charges against the standard rate.

The objection of the railways to the saving clause on the ground that it defeats uniformity is inconsistent with their objection to uniformity on the ground that it does not permit the employers to pay wages above

the standard to more efficient men. Like the graduated standard rate, the saving clause, by retaining rates higher than the standard proposed, secures payment above the minimum level. There is no reason why higher paid employees should lower their standard of living in order that the railways may find it easier to pay adequate wages to the less fortunate workmen. Since the granting of a standard rate does not of necessity imply a uniform rate to all employees of a given grade, there is nothing in the saving clause, which preserves rates higher than the standard, contrary to the theory of a standard rate.[1]

Finally, the standard rate is inevitable where collective bargaining is the practice. Committees of the employees and of the railways, government mediators, or arbitration boards are confronted with the problem of determining the amount due to each employee of the grade of employment concerned. The mere number of workmen employed on a single road or system renders the determination of a rate for each individual an utter

[1] It should be emphasized, however, that the higher rates maintained by the saving clause are, in all likelihood, merely temporary. It is only a question of time before the standard is gradually raised to the level of the highest existing rate, and then, barring those grades of employment in which the graduated standard is paid, one uniform standard will be paid to all employees of a certain grade in the same class of service. Where this condition is brought about there will be no more need for the saving clause.

impossibility. The body fixing the rates may be convinced that the various physical and traffic peculiarities on the particular road should be reflected in the rate of pay, but it is forced to recognize its inability to determine for each employee separately the amount commensurate with the labor involved in the particular kind of work which he performs. Any attempt to determine for each laborer the exact quantitative relation between the rate of pay and such elements as the number of tracks on the division, the percentage of curves and grades, or the number of passengers and tons of freight hauled would require an attention to detail and a nicety of calculation attainable only by the method of individual bargaining. Collective bargaining, which is here to stay, admits of no such exact fixing of rates, and the committee or board must have recourse to the only alternative, the establishment of a standard rate, a level from which all employees are to start.

The influence of the form of wage bargaining upon the system of wages is even more marked in the case of district than in system standardization. The concerted movement was introduced to force the railways to pay a standard rate throughout the district regardless of the differences between the roads.

This was to be accomplished by uniting and bringing the full power of the employees to bear upon the railways. The power of the railway brotherhoods, however, has not forced the payment of a standard rate in the East, West, and South; the form of wage bargaining has accomplished this result. When collective bargaining is conducted on the scale of the railway concerted movements, which include ordinarily from thirty thousand to a hundred thousand men working perhaps on fifty railroads, it is impossible for the body fixing wages to associate rates with the innumerable varying conditions on the different roads. The determination of the wages of this army of employees lies in the hands of a small body — an arbitration board, several mediators, or a committee representing the employees and railways — and the decision must be rendered within a brief period. Under such conditions it is impossible for the board to consider the different roads separately, and it is forced to disregard varying physical and traffic conditions, and to provide a standard rate applicable uniformly to all the roads within the district. The success and convenience of the concerted movement as a method of wage bargaining warrant the assumption that it will be continued, and if so, district standardization is inevitable.

Just as it is necessary for arbitration boards to disregard the different physical and traffic conditions of individual roads, so they are forced in a concerted movement to consider the railways as a unit and not to permit variations in net earnings between the roads to affect the award of the standard rate. The position of American arbitration boards on this question is undoubtedly correct. The numerous ramifications of intercorporate relations and the possibility of concealing profits render it difficult for an arbitration board to determine whether a particular road is profitable or not, and for these reasons it seems improper to deny employees rates paid on neighboring lines on the ground that the road concerned is unable to meet the increases required.

Even the railways are recognizing the futility of this objection to district standardization. If their contention were allowed, the employees on an unprofitable road could never hope to receive a reasonable wage, even assuming that the rates paid in the vicinity were reasonable. There is no reason why an employee should forego his claim to like pay for similar service, merely because the railroad on which he works is operated at a loss. District standardization, therefore, should not be refused on the ground that

individual roads are unable to pay the standard of the district.

District standardization holds out many real advantages to all parties concerned in the settlement of the wage problem. If the employees of a given district agree to the principle, and if they succeed in obtaining district standardization, every possibility of unfair discrimination against them as regards wages on the part of the employer is removed. No employer will be permitted to pay wages below the standard set for the district, and if the organizations of the men are powerful, it is likely that this standard will represent an adequate wage. The payment of a standard rate throughout a district will remove one of the most serious causes of dispute between employers and employees, and this will redound to the benefit of the employers and the public in the lessening of the number of disputes and the chances of an interruption to the processes of production.

Moreover, district standardization will undoubtedly facilitate the work of arbitration boards and other wage-fixing bodies. As the employees have demonstrated, the adoption of this principle renders it possible to determine with some exactness what the actual advance in wages within a given period has been. This will enable boards to

ascertain whether wages have increased the proper amount, and will lessen the chance of injustice being done to both sides by an arbitrary increase in wages. A uniform standard throughout a large district will also make the application of a broad general principle of wage advance comparatively simple. For instance, if the increase in the cost of living were the principle determined upon, it would be difficult to estimate the actual per cent of increase in the cost of commodities for the various incomes resulting from the wide diversity of rates. If, however, a standard were in force throughout a considerable territory, the increase in the cost of living for that income could be calculated, and this per cent increase applied uniformly to those receiving the standard rate.

It has been asserted that district standardization results in unfair discrimination among employees and that "it is a disregard of the individual in the larger strategic interest of the organization as a whole." [1] Dr. F. J. Warne has answered the latter statement by saying that such a disregard is something to be commended rather than criticized, and the former assertion he claims may be true, but "the advantage of stand-

[1] F. H. Dixon, "Public Regulation of Railway Wages," Proceedings of American Economic Association, 1914, p. 250.

ardization over any other method is that it results in less unfair discrimination — it provides a broad basis from which all employees within the group are to start." [1] In one respect, however, district standardization may result in very real discrimination. The application of a uniform standard over an area as large as the railway districts in which wide differences in the cost of living exist [2] will cause frequent inequalities in the real wages paid to those performing similar work. The practice in concerted movements in the past has been to make no differences in rates within a given district even though living costs vary greatly between different parts of that district. The uniformity thus obtained has been uniformity of money rather than of real wages. Boards have been forced to disregard variations in cost of food, rent, etc., between different sections, partly by reason of the lack of adequate statistics showing the exact differences in the cost of

[1] Proceedings of American Economic Association, 1914, p. 280.

[2] Differences in food prices throughout the United States are clearly shown in the reports of the U.S. Bureau of Labor Statistics. Variations between cities both in food and rent costs were the subject of special study by the British Board of Trade inquiry into the cost of living in the United States made in 1911. The variations shown for food prices were very wide, from 91 for Detroit to 109 for Atlanta (New York City = 100). Rents showed even greater variations — 52 for Lowell to 101 for St. Louis (New York City rents = 100). See Board of Trade Inquiry into the Cost of Living in American Towns, 1911, Introduction, pp. xxv–xxvi; xxxiv–xxxv.

living, and partly on account of their inability in large concerted movements to allow for variations in living costs in the rates. It seems, however, that differences in the cost of living between various sections of a district should be allowed to affect rates, for a standard rate of an absolute amount, where there are wide diversities in living costs, will accomplish only apparent standardization. It is recognized that there are many difficulties attending the carrying out of this policy; but some general rule for differences in the cost of living may be applied, such as that suggested by Sidney and Beatrice Webb, in which a uniform standard rate is to be varied by a percentage increase for cities and a percentage decrease for purely agricultural districts, the assumption being that differences in the cost of living between sections resolve themselves into differences in rents — city rents being higher than country rents.[1] On some such broad, general rule, differences in living costs may be roughly reflected in the standard rate paid within a given district.

One of the counsel for the Western roads in the Engineers and Firemen's Arbitration in 1915 stated that the West and the East

[1] Webb, *Industrial Democracy* (1902 ed.), p. 321.

were gradually approaching each other in the matter of wages. In pioneer days, when the West was sparsely settled, when conditions of living were unfavorable and when the cost of living was higher, rates of wages of all laborers were greater in the West than in the East. At the present time, however, he said, the old hardships were disappearing, conditions surrounding life were practically the same East and West; wages in all employments, and the cost of food, rents, fuel and light in the East were more and more approaching the level of the West. Therefore, "there is not a disparity in conditions that would justify the payment of a different minimum wage in the West from the minimum fixed in the East." [1] This statement may be true; but the fact remains that, at the present time, wages in almost all occupations are higher in the West than in the East.[2] The very existence of such a differential in favor of the West is ample justification for refusing the award of a standard rate in the East equal to that paid in the West. It is likely, however, that conditions are gradually becoming uniform in these two sections of the country, and, therefore, the suggestion of the Eastern Conductors and Trainmen's

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, pp. 7586–7588.

[2] Scott Nearing, *Wages in the United States*, pp. 108, 156.

Board (1913) relating to the establishment of a board of inquiry is much to the point. It was suggested that Congress should authorize a commission to examine conditions in the two areas, and if it were found that a higher wage in the West were justified the commission should determine the amount of this differential. Such a board of inquiry should include representatives of the employers and the employees, and the findings should not be confined to the railway situation only, but embrace enough industries to make possible the definitive settlement of this phase of the wage problem for all employees.

The Eastern Conductors and Trainmen's Board was undoubtedly justified, also, in its refusal to standardize rates East and West by the lack of agreement among the employees in these two districts regarding national standardization. It is natural for workmen in the West to desire as high wages as possible, and to use the increases in the East as a basis for their wage demands. Similarly, it is natural for workmen in the East to demand the Western rates. This practice, however, can only result in continuous wage requests, with evil effects upon employers and employees. Before it is possible to equalize the rates East and West, it is manifestly necessary for the employees in

the two districts to agree to stand for national uniformity, and not to employ the "endless chain" method of obtaining increases. In the Eastern Conductors and Trainmen's Arbitration, Mr. Garretson stated that the Conductors were willing to take such a step; but, so far as is known, the other organizations have not agreed to the principle of national standardization.[1]

If a commission of inquiry reported that there were no essential territorial differences in wages between the East and West, and if the employees in the West accepted the principle of national uniformity, there would be no justification for an arbitration board to refuse the absolute equalization of rates East and West, except on the ground that mountainous districts in the West required greater wages and that the cost of living varied considerably throughout the country. As far as possible, both in the application of district and national standardization, variations in the cost of living should be reflected in wages, the ideal being the equality of real wages rather than absolute equality. It is not likely, however, that national standardization will be secured until collective bargaining is extended so as to determine

[1] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 1983.

in one wage movement the rates to be applied throughout the country. When the district concerted movement becomes a national concerted movement, then the forces which made district standardization in the railway industry inevitable will accomplish national standardization.

The principle of national standardization has many advantages. Employers will be spared the annoyance of numerous local adjustments. Employees will receive a national standard rate, and the power of the national unions will be sufficient to make this standard an adequate one. The settlement of wages on a national scale will make employees chary of presenting wage demands based upon trivial grounds, and the responsibility of those involved in the settlement of wages will be so great on account of the public effect of an open breach, that resort to strikes will become more and more infrequent.[1] In spite of these advantages, however, no step can well be taken to further national standardization until a competent commission reports upon the similarity of conditions East and West; and employees throughout the country formally commit themselves to this policy, and unite in nation-wide concerted movements with the national uniformity of real wages in view.

[1] *Railway Age Gazette*, Vol. L, No. 16, pp. 934–935.

CHAPTER II

THE LIVING WAGE

The principle of standardization has been one of the most effective means of wage advance employed by the highly skilled and strongly organized grades of railway labor. The weaker railway labor organizations, however, have been unable to cope with the roads by means of the concerted movement, and, therefore, standardization has rarely figured in the demands of the employees outside of the four train-service brotherhoods. In spite of this handicap, the unskilled and poorly organized workmen have conducted vigorous movements for wage advance. The principle upon which their wage demands have been chiefly based has been that of the living wage.

In the treatment of wages, much confusion has resulted from the inaccurate use of such terms as the minimum of subsistence, the living wage, the normal standard of living, and the standard of living. At the outset, therefore, it will be necessary to draw a clear line of demarcation between these expressions and to set forth the meaning attached to them in the following pages.

A wage sufficient to secure the minimum of subsistence is one which is capable of obtaining for its recipient at the existing prices of commodities the bare necessities of life — the minimum of food, shelter, clothing, fuel and light — required to keep the laborer and his family alive. Above this minimum of subsistence lies what is commonly known as the normal standard of living, which comprehends much more than the mere minimum of subsistence. It includes the quantity and quality of food consumed by the average laborer, sanitary living quarters, adequate clothing, fuel and light, and in addition, a provision for recreation, medical attendance, and a small amount of savings. The wage required to secure this normal standard of living is called the living wage.

It has always been recognized, however, that in certain occupations, by reason of the superior skill, responsibility, and hazard involved, the laborers are entitled to compensation in excess of the amount necessary to secure the minimum of subsistence or the normal standard of living. There have thus developed among the whole mass of laborers certain strata of living standards, dependent, in the main, upon the size of the income and the prices of commodities, the state of civilization existing in the country at the partic-

ular time, the class of society to which the individual belongs, and his ability to distribute the income wisely and to get the most out of the amount received. These strata are called standards of living. For each occupation within a given industry, then, there is a certain, vaguely defined scale of comfort which each worker at that particular occupation considers as his right. It is proper, therefore, to speak of the standard of living of the locomotive engineers as an entirely separate and distinct scale of comfort from that enjoyed by the conductors or firemen.

With these grades of railway labor, there is no doubt that the wage received is considerably in excess of the living wage or of that required to obtain the minimum of subsistence. Among other grades of railway labor, however, which do not have the skill, risk, and responsibility of the engineers or conductors and where the wage in consequence is much lower, there is a conviction that the wage received is insufficient to secure the normal standard of living. These employees consider that standard as their right, and they demand increases in wages of such an amount as to bring their compensation to the living-wage level.

By a living wage the railway employees imply compensation sufficient to purchase

the food necessary for health and efficiency; to enable the employee to have his own home; to keep his children from working at an early age so that they may receive proper education; and to lay up a competence for his old age. The amount and quality of food and the home surroundings are to be governed by American standards, and not by comparison with foreign laborers who are accustomed to a lower standard of living than that of the average unskilled American workman.[1] Both in Canada and in the United States the lower-paid employees on the railways have made frequent appeals to arbitration boards to grant a living wage. In a number of disputes, the living wage has been the specific basis of the employees' demands; in others, this basis has been implied, since the men involved were already receiving compensation equivalent to the commonly estimated amount of the living wage, but were demanding an increase based on the advanced cost of living, clearly with the purpose of keeping the "real" living wage intact.

In the arbitration of 1914, involving the New York, Chicago, and St. Louis Railway ("Nickel Plate") and the Telegraphers, Signalmen, and Station Agents, the employees'

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7774; *Locomotive Engineers' Magazine*, June, 1912, p. 569.

representative laid particular stress upon the necessity of paying a living wage to the men, and expressed willingness to waive every other basis for advanced wages and to rest his entire argument on the principle of the living wage.[1] In the Wheeling and Lake Erie Arbitration (1914) concerning compensation of telegraphers, telephoners, signalmen, and station agents on three railways, the men argued that the minimum of $55 monthly was inadequate and that at least $65 was required to obtain a decent livelihood for an employee and his family.[2] In Canada, the maintenance of way employees have been the most energetic of the lower-paid men in demanding increases. In 1911 these employees conducted a successful movement on the Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific, basing their demands in each case upon the principle of the living wage.[3] Again in 1913–1914 the same grade of employees on the Canadian Pacific, the Canadian Northern, the Grand Trunk, and the Grand Trunk Pacific applied for further increases, the men's representative in the first dispute claim-

[1] "Nickel Plate" Arbitration (1914), Proceedings, pp. 129, 136.

[2] Wheeling and Lake Erie, etc., Arbitration (1914), Proceedings, pp. 135–141.

[3] Department of Labour (Canada), Annual Report, 1911, Appendix, pp. 221–247, 248–254, 255–274.

ing that the employees should receive a minimum wage measured by "the necessary amount required to live on." [1] In several Canadian cases where the roads were paying wages lower than in other localities, the employees claimed that since there were no differences between these localities in respect to the cost of living, the wages should be the same.[2]

The number of cases in Canada in which the employees have specifically or impliedly based their demands on the principle of a living wage is greater than in the United States,[3] for in the latter, the railway arbitra-

[1] Canadian Pacific *vs.* Maintenance of Way Employees, *Labour Gazette* (Canada), February, 1914, p. 912; Grand Trunk Pacific *vs.* Maintenance of Way Employees, *ibid.*, March, 1914, pp. 1055–1056; Grand Trunk *vs.* Maintenance of Way Employees, *ibid.*, October, 1913, pp. 430–442; Canadian Northern *vs.* Maintenance of Way Employees, Department of Labour (Canada), Annual Report, 1915, Appendix, pp. 102–105.

[2] Canadian Pacific *vs.* Freight Handlers (1909), Department of Labour (Canada), Annual Report, 1910, Appendix, pp. 166–174; Michigan Central *vs.* Telegraphers, *ibid.*, 1912, Appendix, pp. 128–137.

[3] Other United States cases: (1910), Baltimore and Ohio Southwestern *vs.* Telegraphers; Southern Railway *vs.* Telegraphers; Missouri Pacific *vs.* Telegraphers; "Big Four" *vs.* Telegraphers; (1913), Southern Railway *vs.* Maintenance of Way Employees; (1914), Wheeling and Lake Erie, etc., *vs.* Telegraphers; "Nickel Plate" *vs.* Telegraphers. In Canada, the following cases may be cited: (1908), Grand Trunk *vs.* Telegraphers; Canadian Northern *vs.* Engineers; (1909), Canadian Pacific *vs.* Freight Handlers; Canadian Northern *vs.* Maintenance of Way Employees; (1911), Grand Trunk *vs.* Machinists; Canadian Northern, Canadian Pacific, and Grand Trunk Pacific *vs.* Maintenance of Way Employees; (1912), Canadian Pacific *vs.* Telegraphers and Station Agents; (1913),

tion laws apply only to those actually engaged in the movement of trains, whereas in Canada the Industrial Disputes Investigation Act applies to all employees working in public or quasi-public utilities. In the United States of the lower-paid grades only the telegraphers, telephoners, signalmen, station agents, and maintenance of way employees have been affected by the Erdman and Newlands Acts; in Canada, however, in addition to the above grades of employment, such others as the freight handlers, machinists and shopmen, carmen, helpers, etc., have had their wages adjusted under the Dominion law, and have based their demands on the necessity of receiving a living wage.

In reply to the demands of the employees for a living wage, the railways offer no serious objection. Opinion may differ as to the amount required to support a laborer and his family according to the standard which he considers his right, but the principle involved, namely, that the employee should receive a wage adequate to satisfy mere subsistence wants, plus certain conveniences and luxuries, is generally upheld by railway officials. The roads, however, have objected on two grounds to an increase in the compensation of low-

Grand Trunk *vs.* Maintenance of Way Employees; (1914), Canadian Northern, Canadian Pacific, and Grand Trunk Pacific *vs.* Maintenance of Way Employees.

paid men to the standards demanded. For instance, in the "Nickel Plate" Arbitration (1914), the road contended that the wage paid to telegraphers and station agents was just and reasonable because it compared favorably with the amount of compensation received for similar work on other lines in the neighboring district.[1] This has been the claim of the employers in almost every arbitration in Canada and in the United States in which one road only has been involved. There is no attempt to prove that the rate paid is sufficient; if the road is paying the customary going rate in that particular neighborhood, it is assumed that that amount of compensation is just and equitable.

Another objection made to any increase in compensation is that, as the margin between gross income and gross expenditures is already so narrow, any increase in fixed charges occasioned by an advance in wages will result either in bankruptcy or in the necessity of applying to rate-regulating bodies for freight and passenger rate advances.[2] This inability of the road to pay increases

[1] "Nickel Plate" Arbitration (1914), Proceedings, pp. 388, 393.

[2] Illinois Central Ry., etc., *vs.* Telegraphers (1910), Records, U.S. Board of Mediation and Conciliation, File No. 18; Wheeling and Lake Erie, etc. Arbitration (1914), Proceedings, pp. 309–310; "Nickel Plate" Arbitration (1914), Proceedings, pp. 385–386; 389; 392–393; "Big Four" Arbitration (1910), Records, U.S. Board of Mediation and Conciliation, File No. 26.

may arise from the chronic unprofitableness of the particular road on account of the undeveloped or backward state of the territory traversed, the necessity of large expenditures for upkeep due to the peculiar physical condition of the country through which the road passes, etc.; or from some temporary influence, such as general business depression, which tends to reduce earnings and cut down the margin between earnings and expenses.[1] The usual position of the railways is that, since they are paying customary rates, these are to be assumed equivalent to a living wage, and, provided this assumption be true, an increase should be refused if the road is unprofitable, either on account of permanent conditions, or by reason of general business depression. They admit, however, that a living wage should be paid.[2]

Numerous arbitration boards, both in Canada and in the United States, have favored the payment of a living wage during times of normal business activity without regard to the ability of the road to pay. In the "Nickel Plate" and in the Wheeling and Lake Erie Arbitrations (1914) the boards imposed a

[1] Canadian Northern *vs.* Maintenance of Way Employees (1914), Report, Registrar of Boards of Conciliation and Investigation, 1915, pp. 102–105; Canadian Pacific *vs.* Maintenance of Way Employees (1914), in *Labour Gazette* (Canada), February, 1914, p. 904.

[2] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, p. 9577.

minimum of $65 a month for telegraphers and station agents on the New York, Chicago and St. Louis, Wheeling and Lake Erie, Wabash, Pittsburgh Terminal, and West Side Belt Railways.[1] The telegraphers on the Missouri Pacific were also granted a living wage in 1910.[2] All the above-mentioned roads argued that they were unable to make any advances in pay, and several of them were in the hands of receivers at the time of the wage increase. In Canada, the maintenance of way employees on the Grand Trunk Pacific, Canadian Pacific, and Canadian Northern received increases in 1911 in face of a vigorous statement on the part of the roads that their financial condition did not warrant any advance in wages.[3] In the case of the Canadian Pacific Railway against its telegraphers and station agents in 1912, the board recommended a ten per cent increase to be distributed with regard to the personal and family necessities of the recipient, to the location, and other advantages and disadvantages. The board held that the "... amount of work done, the cost for

[1] "Nickel Plate" Arbitration (1914), Report of Board, p. 723.

[2] Missouri Pacific Arbitration (1910), Report of Board, p. 2.

[3] Canadian Pacific *vs.* Maintenance of Way Employees (1911), Report, Registrar of Boards of Conciliation and Investigation, 1911, pp. 221–247; Grand Trunk Pacific *vs.* Maintenance of Way Employees (1911), *ibid.*, pp. 248–254; Canadian Northern *vs.* Maintenance of Way Employees (1911), *ibid.*, pp. 255–274.

house rent, etc., and the number of the recipient's family ought to govern the distribution." [1]

In several Canadian cases, however, the inability of the roads to pay was permitted to reduce the full demands of the employees, although the living-wage principle was specifically recognized. The board in the dispute between the Canadian Northern and its engineers found that these employees were not receiving a living wage, and therefore authorized an increase, with the condition, however, that the men's demands should not be granted in entirety in view of the circumstances of the company.[2] Again, in the settlement of the dispute between the Grand Trunk Railway and the telegraphers, the full increases demanded were not recommended, the board stating, however, that the right of the men to receive a living wage is paramount.[3]

The report of the board constituted to decide upon the wages of the maintenance of way employees on the Southern Railway is particularly important because the whole

[1] Canadian Pacific *vs.* Telegraphers and Station Agents (1912), Report, Registrar of Boards of Conciliation and Investigation, 1913, pp. 85–95.

[2] Canadian Northern *vs.* Engineers (1908), Department of Labour (Canada), Annual Report, 1909, Appendix, pp. 293–305.

[3] Grand Trunk *vs.* Telegraphers (1908), Department of Labour (Canada), Annual Report, 1909, Appendix, pp. 359–360.

question of the living wage was considered from all possible viewpoints. The chairman held that every workman was entitled to a living wage.[1] An attempt was made to compute the increase in the cost of living and in wages between two definite years, the result showing that the advance in wages had kept pace with the advance in the costs of commodities and, therefore, that no increase in wages was due on that account. The board then took the railway point of view that the test of the adequacy of wages was ". . . a comparison with labor on other railroads where duties are the same and classifications nearly identical." [2] That is to say, wages on other lines were assumed to be living wages. The result of this comparison showed that six roads paid higher wages and five roads lower than those paid on the Southern.[3] Considering the financial straits of the road, the board felt that it was not at liberty to impose the highest rates existing in the same territory, but only a fair average.[4] This average was found to be equivalent to the average already paid on the Southern; therefore, the board felt justified in refusing an increase in wages.[5] Thus, in this arbitration,

[1] Southern Railway Arbitration (1914), Proceedings, pp. 10–11.
[2] *Ibid.*, Report of Board, p. 14.
[3] *Ibid.*, Report of Board, pp. 21–23.
[4] *Ibid.*, Report of Board, p. 6. [5] *Ibid.*, Report of Board, p. 23.

the board upheld the principle of a living wage, but determined the amount of that wage by comparison with other roads, and refused to increase wages on the ground of the inability of the Southern to pay, although six other roads in the territory were paying higher rates of compensation.

Inability of the roads to pay on account of business depression as an argument against an increase intended to give a living wage found support in three recent cases in Canada. The maintenance of way employees on the Grand Trunk Pacific, Canadian Pacific, and Canadian Northern were refused an increase in the early part of 1914 on the ground of financial stringency pending claims for an advance in freight rates.[1] In the "Big Four" Arbitration (1910) the chairman stated that the rates of pay granted were not to be construed as giving all that the telegraphers might legitimately ask. "The period of depression from which business is just emerging and the consequent physical and financial conditions of the railroad have, however, been taken into consideration and on this account larger concessions have been re-

[1] Canadian Pacific *vs.* Maintenance of Way Employees (1914), *Labour Gazette* (Canada), February, 1914, pp. 904–912; Grand Trunk Pacific *vs.* Maintenance of Way Employees (1914), *ibid.*, March, 1914, p. 1056; Canadian Northern *vs.* Maintenance of Way (1914), Report, Registrar Boards of Conciliation and Investigation, 1915, pp. 102–105.

fused." [1] Summing up the attitude of American arbitration boards, it may be said that they favor granting a living wage to the lower paid and unskilled employees, with a tendency, however, especially in Canada, to recognize the inability of the road to pay as a consequence of business depression as a proper ground for reducing in amount or altogether refusing advances in wages properly deducible from this principle.

There is practical agreement nowadays among students of social conditions that no employee should receive compensation below an amount sufficient to secure a normal standard of living.[2] The opinion is current that since the result of the wage contract is dependent upon the relative strength of the two parties, and since the employees are usually the weaker, employers should be limited in the exercise of their superior power by a provision that every wage must fulfill the requirements of a living wage. It is unnecessary to treat here of the reasons for the

[1] "Big Four" Arbitration (1910), Records, U.S. Board of Mediation and Conciliation, File No. 26.

[2] Among numerous other evidences of this may be cited the discussion following a presentation by Professor J. B. Clark of a paper entitled "What Principles Should Govern the Determination of Wages by Arbitration Boards?" before the American Economic Association in 1907. The expressed opinion was almost unanimously in favor of a living wage (Publications of the American Economic Association, 3d Series, Vol. VIII, No. 1, pp. 29–53).

payment of a living wage. The evil effects upon society and upon the laborer himself arising from the failure to receive such a wage are patent. Undoubtedly a living wage is a necessity; the real issue is whether it is possible to determine the essentials constituting a normal standard of living, and whether the amount of money required to purchase these essentials can be calculated within reasonably exact limits.

Recent investigations concerning the essentials properly constituting the normal standard of living show virtual unanimity of opinion. In addition to food in such quantity and of such quality as the average American laborer consumes, living quarters with sanitary conveniences, and large enough to meet the requirements of morality, clothing, warm and of good appearance, and the necessary fuel and light, the normal standard includes a provision for a small amount of recreation, for medical attendance, and for a sum of money to be utilized to tide over short periods of unemployment and to provide for life insurance and membership in some benefit society.[1] The above essentials are based on the needs of a family of five, consisting of a man and wife, and three dependent children.

[1] E. T. Devine, *Principles of Relief*, pp. 29–36; L. B. More, *Wage-Earners' Budgets*, pp. 269–270; R. C. Chapin, *Standard of Living among Workingmen's Families in New York City*, pp. 75–198.

Such is the estimation of the essentials in a normal standard of living agreed upon by economists and social investigators, and put into practice in the administration of the Australasian arbitration and wages boards.[1]

The practicability of determining the amount of compensation necessary to secure this normal standard in the United States has been established by Chapin, More, Nearing, Streightoff, and by investigations undertaken by the United States Bureau of Labor Statistics, and by various state labor bureaus. Variations appear, it is true, but these are due to differences in locality or in the period of the investigations, living costs varying considerably from time to time and from place to place. For New York City Chapin estimated that the above essentials could be obtained for a yearly expenditure of $900;[2] More put the figure at from $800 to $900.[3] Dr. Devine concluded that unless a family of five in New York City in about the year 1905 received at least $600 a year, it would inevitably become dependent,[4] and for the United States at large Streightoff estimated that a family living wage in the cities should

[1] *Economic Journal*, Vol. xxv, No. 99, p. 323; *Harvard Law Review*, Vol. xxix, No. 1, pp. 14–15; Aves, *Wages Boards*, Appendix, pp. 216–217; Bulletin, U.S. Bureau of Labor Statistics, No. 167, pp. 9, 146, 165, 167.

[2] Chapin, pp. 245–250. [3] More, pp. 269–270. [4] Devine, p. 35.

average $650.[1] These various determinations, based on careful investigation, give evidence that it is possible in general terms to arrive at a sufficiently exact calculation of the normal standard of living and of the wage necessary to secure that standard.

In view of the evident possibility of determining the amount of a living wage, it seems that arbitration boards in applying the principles of a living wage should be governed in their findings by reference to such results as those obtained by More and Chapin. Instead, however, recourse has been had to such expedients as those illustrated in the summary of the reasoning of the board in the Southern Railway Arbitration given above.[2] It is not valid to assume that the average rate paid to unskilled men on neighboring lines is necessarily a living wage. Wage comparisons as between different roads are proper when the principle of standardization is involved. In that case, the desire is to establish a uniform rate on all roads within a given territory, and for this purpose, a comparison is required so that compensation on those roads paying low wages may be raised to the average, going, standard rate of the district. The issue is primarily uniformity. In the

[1] F. H. Streightoff, *Standard of Living*, p. 162.
[2] See above, p. 65.

application of the living wage principle, however, the issue is adequacy of wages — the amount of the wage required to maintain a predetermined normal standard of living. If it be decided to base wages of telegraphers or maintenance of way employees on the principle of a living wage, then a determination of their compensation can never be based fairly on a comparison with the wages paid the same grades of employment on other lines. The sole measure of a living wage is the amount of money required at a given time and at a given place to secure for an employee, assuming that he is married and has a certain number of dependent children, a normal standard of living. This standard and the compensation necessary to obtain it have been determined for certain localities, and it is possible, by taking account of differences in the cost of food, rent, clothing, etc., between these localities and the one concerned in the particular arbitration, or by referring to the general average of the living wage for the entire country, to calculate a reasonably exact approximation of the living wage for the employees involved.

One of the important problems confronting railway arbitration boards has been the question of the influence which the inability of the road to pay should have upon demands for

wage advance based on the principle of the living wage, when such inability arises from some cause other than business depression. In Australasia the practice, in so far as living wages are concerned, has been to disregard the financial condition of the employer. The following quotation from a speech in the Legislative Council of New Zealand is fairly typical of the attitude of the members of arbitration and wages boards. After upholding the principle of paying a living wage, the speaker said: "And if a trade cannot be carried on so as to give the worker such a wage as to enable him to work at that trade and enable those who are dependent on him to live in decency, we do not want that trade, because there are in this country other trades still left in which a competent man can be paid such wages as will keep him from degradation and maintain him in that position in which we, as civilized people, wish to see our workers as a whole." [1] In considering the effect of inability to pay upon the standardization of wages, the conclusion reached, based upon the practice in the United States, and upon the evident advantages of standardization, was that the unprofitableness of individual roads should not militate against the application of that principle. The employees

[1] Aves, Appendix, p. 216.

concerned with standardization receive a wage far in excess of that required to secure the normal standard of living, and if arbitration boards in the United States have universally refused to allow unprofitable roads to pay less than the standard to these employees, they should not permit any business, no matter what its financial condition, to pay less than the full living wage to men whose compensation is close to the minimum of subsistence. A living wage to the lowest paid men is paramount and takes precedence over every other charge on the industry. If need be, prices should be raised in order to permit the business to pay a living wage to its unskilled and lowest paid employees.

When inability to pay arises out of general business depression, arbitration boards face an additional problem — not only a decision as to whether wages should be increased on the principle of a living wage during periods of depression, but also whether reductions in the wages of the lowest paid men should be allowed at such times. Increases based on the living wage principle should be granted always regardless of the condition of any particular business, or of business in general. The payment of a living wage is paramount, the first charge on the industry. During periods of business de-

pression, it is likely that the prices of the commodity sold by the employer are low and that his margin of profit is exceedingly narrow in spite of the reduction of his business costs to the lowest possible amount. An increase in the wage bill may force the employer out of business if he has exhausted every expedient for reducing his cost. For this reason, employees should present wage demands only during periods of normal business activity or of intense prosperity. If they fail to have regard to these more opportune times for demanding wage increases, however, arbitration boards, nevertheless, should grant the advance required to bring existing compensation to the living wage level, for employees are entitled at all times to a normal standard of living.

The question of allowing reductions in wages during periods of business depression came to the fore in the crisis of 1907. Labor leaders at that time held that the working classes were in no way responsible for the depressed condition of business, and therefore, employees should not be forced to suffer for the faults of others.[1] Again, it was argued that wage reductions tend to accentuate depression, for they compel retrenchment in household economy, thus curtailing

[1] *American Federationist*, February, 1908, p. 107.

consuming power and lessening demand.[1] These arguments are not sufficiently convincing to form a basis for disallowing reductions during periods of business depression. It is probable that the ups and downs of prosperity, crisis, and depression will be leveled off in the course of time, but at present arbitration boards must work on the assumption that recurring depressions in the field of business are normal phenomena. The studies of Professor W. C. Mitchell demonstrate that depression sets in motion certain processes of readjustment by which a return to business prosperity is made possible. Thus, low selling prices of their products force managers to exercise the closest economy and the most skillful organization of the plant in order to obtain profits, or even to maintain the solvency of the business. Costs are reduced to the minimum by this economical management, by the reduced prices of raw materials, and by the lessened labor cost due to the discharge of the more incompetent employees and the retention of the efficient.[2] Any check to these processes of readjustment will seriously hinder the return of business prosperity.

A reduction in wages, it is true, will still

[1] *American Federationist*, December, 1906, p. 977; June, 1907, p. 413; February, 1908, p. 107.

[2] W. C. Mitchell, *Business Cycles*, pp. 578–579.

further lower labor costs, but the possibility of a reduction in this item will tend to cause business managers to neglect economies which may be effected in other directions without lowering the standard of living of a class of labor already extremely low in the scale. Furthermore, the efficiency of labor, which is increased during periods of depression on account of the retention of more competent employees, will be decreased by a reduction in wages. Thus, although a wage reduction will decrease labor costs and in that respect hasten the expansion of business after a period of depression, the same reduction will probably more than counteract the process of readjustment by checking the tendency of business managers to introduce economies in costs other than labor, and by decreasing the efficiency of the employees. In addition, it may be argued that, since the wages of unskilled labor tend to fall off during periods of depression more rapidly than the wages of skilled employees, this tendency should be checked, because, from the standpoint of the living wage, skilled laborers are better able to bear a reduction than unskilled laborers. For these reasons, therefore, reductions in the wages of low-paid men during periods of business depression should be disallowed.

CHAPTER III

THE INCREASED COST OF LIVING

During the past ten years, railway employees in the United States and Canada have appealed frequently to the increasing cost of living, as a basis of wage advance. In numerous disputes settled under the provisions of the Erdman and Newlands Acts and under the Canadian Industrial Disputes Investigation Act, the employees have argued that the general advance in the prices of commodities and the consequent loss in purchasing power operated as a reduction in wages, and therefore an increase in wages equivalent to the advance in prices was imperative. The reasons for the use of increased living costs as a principle of wage advance are not far to seek. For nearly a quarter of a century the "high cost of living" has been a catch phrase upon the lips of every housekeeper; newspapers and magazines have deluged the public with the whys and wherefores of it; various government commissions have investigated and reported; indeed, few public questions at the present day equal in general interest the high cost of living. The pronounced advance in the prices of those

commodities which constitute the chief objects of consumption in workingmen's families is one of the most striking features of the general economic situation to-day. We know, too, that this upward tendency of prices is not confined to any one country, but that the rise in prices of food, rent, clothing, fuel, and light is practically world-wide.[1] In North America, however, and particularly in the United States, the advance in recent years has been unprecedented. Statistics of food prices collected by the United States Bureau of Labor Statistics show that from 1907 to 1914, retail prices of food consumed by the average workingman's family advanced about 24.5 per cent.[2] The increases in fuel prices from 1907 to 1914 ranged from 6.9 to 9.7 per cent.[3] Other authorities agree in placing the rise of rents at 10 to 20 per cent.[4] This rise in the cost of living affects the well-being of every class, especially those dependent upon a fixed income. The publicity given to the increasing cost of living, and its almost universal effect, therefore, have led railway employees to put forward this basis, confident

[1] Select Committee of the Senate on Wages and Prices of Commodities, 61st Cong., 3d Sess., Vol. I, pp. 8–10.

[2] Bulletin, U.S. Bureau of Labor Statistics, No. 156, p. 9.

[3] *Ibid.*, p. 24.

[4] Devine, *Principles of Relief*, p. 36; More, *Wage Earners' Budgets*, p. 32; Department of Labour (Canada), "Wholesale Prices in Canada, 1913," p. 257.

that their demands would receive attentive consideration from arbitrators and conciliators who, in all likelihood, were affected by this same increase in the cost of living.

Again, the general impression to-day is that wages of the employed class as a whole have not kept pace with the rapid advance in the prices of commodities. The Senate Committee of 1910 reported that wages had not advanced as rapidly as prices,[1] and the Massachusetts Commission of the same year came to a similar conclusion.[2] Dr. I. M. Rubinow in a recent article said, "The American wage-worker, confronted with a rapidly rising price movement has been losing ground surely and not even slowly, so that the sum total of economic progress of this country for the last quarter of a century appears to be a loss of from 10 to 15 per cent in his earning power."[3] The statistics of the United States Bureau of Labor show a tendency in wages to lag behind prices, but not to the extent claimed by Rubinow.[4] Reports by special committees, the verdict of economists, and the results of statistical investigation are almost one in the conclusion that the purchasing power of the

[1] Select Committee of the Senate, 61st Cong., 3d Sess., Vol. I, p. 52.

[2] Report of Massachusetts Commission on the Cost of Living (1910), pp. 88–89.

[3] *American Economic Review*, December, 1914, p. 813.

[4] Bulletin, U.S. Bureau of Labor, No. 77, pp. 1–11.

workman's wage has tended downward during the past decade. The leaders of railway labor have been alive to the impression produced by the conclusions stated above, and they have claimed that railway employees are in the same position in respect to wages as employees in other industries. Thus, the disproportionate rise in wages of workmen in general in comparison with the advance in prices has constituted another factor favoring the use of the increased cost of living as a basis of wage demands by the railway employees.

For these reasons, then, the increased cost of living principle has found its place in the employees' briefs in almost every railway arbitration in Canada and in the United States. But apart from these, this basis of the employees' demands goes far deeper and finds its origin in one of the oldest and most stubbornly maintained doctrines of unionism. This Sidney and Beatrice Webb have called the "Doctrine of Vested Interests." The objects of the paragraphs immediately following will be to examine the relation of this doctrine to the cost of living, and to give some idea of the attitude of American railway labor toward it.

By the doctrine of vested interests is meant the belief that the wages ". . . hitherto en-

joyed by any section of workmen ought under no circumstances to be interfered with for the worse." [1] In other words, the standard of living must be maintained at any cost. The standard of living, however, is an indefinite and much misunderstood phrase. It is a complex of so many factors that in order to determine its exact relation to the cost of living, it will be necessary to analyze the term into its component parts. The standard of living of any given class of people may be defined as the scale of comfort which any individual or family instinctively sets as indispensable to its moral, mental, and physical development. It is a resultant of two general forces, environment and individuality.[2] Thus, such factors as the state of civilization, the class of society to which the individual or family belongs, the place of residence, the size of the family, the number of wage-earners in the family, and the character of their occupations, and the amount of income — all these, together with the ideals, ambitions, and the capacity for wisely spending the income act upon each other to determine the standard. Reduced to its simplest terms, however, the standard of living may be said to depend upon four factors: the

[1] Webb, *Industrial Democracy* (1902 ed.), p. 562.
[2] Streightoff, pp. 3–4.

state of civilization, the class of society, the income, and the personal factor. As civilization advances and becomes more complex, "there is a constant, though irregular rise of the standard of living." [1] Numerous commodities which many years ago were regarded as luxuries are now brought within the reach of every one. Few homes now lack modern sanitary conveniences; clothes of better quality and more fashionable style can be purchased at reasonable prices; the opportunities for amusement, such as moving picture shows, have increased; and, taken all in all, the general advance in civilization has served as a potent factor in bettering the condition of the great body of people.

The class of society to which an individual belongs affects his standard of living. The college professor whose salary, perhaps, is less than that of a locomotive engineer, maintains a much higher standard of living owing to the requirements of his calling and to his associations. The size of the income limits the ability of the individual both to realize his ambitions and ideals, and to purchase those commodities and services which he regards as necessary to his welfare. The personal factor as a determinant of the standard of living has received much attention

[1] Streightoff, p. 4.

from recent writers and investigators. It has been claimed that the standard of living depends more upon the degree of judgment exercised in the expenditure of the income than upon any other single factor. The results of recent investigations, however, prove the contrary. The Chapin report on the standard of living in New York City states that the personal factor does operate in every family, as regards the habits of the father and the managing ability of the mother, but there are limits to what can be done by thrift and economy; for example, decent housing cannot be obtained below a certain figure, health cannot be maintained on bread and tea, and in spite of skillful mending, shoes and coats will wear out.[1] Investigation seems to show that the income is the chief determinant of the standard of living. Thus Chapin says, "The actual standard . . . is set primarily . . . by the wages paid and the prices charged." [2] Similarly, More states, "From an economic standpoint . . . the amount of income is the most important factor in determining the standard of comfort attainable in an average workingman's family." [3]

If it be granted that the income is the chief determinant of the standard of living, then

[1] Chapin, pp. 249–250. [2] *Ibid.*, p. 250.
[3] More, p. 270; Nearing, *The Adequacy of American Wages*, p. 2.

any reduction in money wages unattended by a corresponding reduction in prices, or any reduction in real wages as a consequence of an upward price tendency will, of course, operate against the doctrine of vested interests. It was argued in the Chicago, Burlington and Quincy Arbitration (1914) that as a result of the increased cost of living, the purchasing power of the wages of the employees had declined "resulting in a lower standard of living, a sacrifice of comfort, a denial of better education for the children of workingmen, and withal a discontent which tends to reduce efficiency, to the detriment of both the employer and the employee." [1] The railway arbitrations, both in Canada and in the United States, in which this same statement has been made in various forms, are too numerous to set forth here.[2] In the

[1] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 58–59.

[2] Among the arbitrations in the United States in which the employees have brought forward the increased cost of living argument are: Chicago Switchmen's Arbitration (1910); Denver and Rio Grande Arbitration (1910); Western Firemen and Enginemen (1910); Missouri Pacific Arbitration (1910); "Big Four" Arbitration (1910); Eastern Conductors and Trainmen's Arbitration (1913); Southern Railway Arbitration (1913); Chicago and Western Indiana, Belt Railway Co. Arbitration (1913); Wheeling and Lake Erie, etc., Arbitration (1914); "Nickel Plate" Arbitration (1914); Western Engineers and Firemen's Arbitration (1915). In Canada the following may be cited: Canadian Northern *vs.* Engineers (1908); Canadian Northern *vs.* Maintenance of Way Employees (1909); Grand Trunk *vs.* Machinists (1911); Canadian Pacific *vs.* Maintenance of Way Employees (1911); Canadian Northern *vs.* Main-

Eastern Firemen's Arbitration (1913), President W. S. Carter of the Brotherhood of Enginemen and Firemen said, "I say this general upward trend of the cost of living, or rather the downward trend of the purchasing power of money, is one of the most important things to be considered in wage matters."[1]

Railway employees are being constantly reminded that the only means of maintaining their standard of living in view of steadily advancing prices is to demand a corresponding increase in wages. The publications of the railway brotherhoods make frequent reference to the necessity of the maintenance of the standard of living, and one asserts that "there is a great work to be done by the railroad labor organizations before the pay of railroad employees bears the same proportion to the cost of living now that their wages did ten years ago." [2] Another, quoting the men's counsel in the Georgia Railway Strike in 1910, states that it is useless to blame the trusts and the tariff and to attempt to reduce prices. The public is in sympathy with the brotherhoods, and the course for the men to

tenance of Way Employees (1911); Grand Trunk Pacific *vs.* Maintenance of Way Employees (1911); Canadian Pacific *vs.* Telegraphers (1912); Michigan Central *vs.* Telegraphers and Station Agents (1912).

[1] Eastern Firemen's Arbitration (1913), Proceedings, p. 2432.

[2] *Locomotive Firemen and Enginemen's Magazine*, September, 1910, p. 401.

pursue is to make demands for substantial and drastic wage advance.[1] The policy of the railway brotherhoods, then, in the conviction that wages have not moved on a line parallel with the increasing cost of living, is to force wage concessions from the railways, until the percentage increase in wages through a term of years is equal to the percentage increase in the cost of commodities. In this way only, they claim, can the standard of living be maintained.

The position of the railways in regard to the merits of the increased cost of living as a basis for wage advances is somewhat difficult to define. With them it is more a question of fact than of principle. In general it may be said that the employers hold that the various wage increases between two definite years have taken into account the advances in the cost of living for that period. In the Eastern Conductors and Trainmen's Arbitration (1913) the roads maintained that the Clark-Morrissey Award of 1910 should be the starting-point in determining the advance in wages, and that since 1910 there had been no change in living costs to warrant an increase in wages.[2] This same position

[1] *Locomotive Firemen and Enginemen's Magazine*, March, 1910, pp. 397–398.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Reply Brief, p. 7; Report of Board, p. 68.

was taken by the railways in the Eastern Engineers' (1912) and the Western Engineers' and Firemen's Arbitrations (1915).[1] Thus, the railways question the facts in the men's claims, without admitting or denying the justice or injustice of a wage demand based upon the maintenance of the standard of living. Elisha Lee, Chairman of the Conference Committee of Managers in the Eastern Conductors and Trainmen's Arbitration (1913), stated perhaps more clearly than any one else the attitude of the railways toward the principle of the maintenance of the standard of living. He said: "It is an attractive thought that a wage should be based upon an estimated standard of what is required for a healthy life. But such an ideal is hopelessly impracticable of application. . . . Must we not in the final analysis face the fact that wages are a payment for a service rendered, and that it is neither just nor practicable to force employers to pay, not according to the value of the service, but according to the workman's standard of his own needs?" [2] Railway officials, however, are not agreed as to the rejection of the employees' arguments, for President W. C.

[1] See also "Nickel Plate" Arbitration (1914), Proceedings, p. 135; Southern Railway Arbitration (1913), Report of Board, p. 1.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, p. 2054.

Brown, of the New York Central, stated in 1910, during the proceedings of the Clark-Morrissey Arbitration, that "it may be laid down as a sound business principle that further advances should only be made when, and in such amount as shall be necessary to meet the increased cost of living." [1] The railways' position, then, in regard to the principle involved in the increased cost of living as a wage basis is uncertain, but as to the question of fact, their contention is definite that the compensation of employee has increased in equal or greater proportion than have the prices of commodities, and, therefore, no wage advances are justifiable on that basis.

Apart, however, from their view as to the merits of the principle itself, the railways maintain that the application of the principle of the increased cost of living is attended by serious drawbacks which militate against its value as a basis for wage advances. In the first place, objection is made on the ground that in estimating the cost of living, food prices only are considered and that food represents from thirty-five to fifty per cent of the total expenditures of families earning from $200 to $1200 a year. For instance,

[1] Eastern Conductors and Trainmen's Arbitration (1913), Quoted in Employees' Brief, p. 23.

in the Eastern Conductors and Trainmen's Arbitration (1913) the railway representatives claimed that, as food expenditure in a conductor's family represented only about forty per cent of the total expenditure, the 13.4 per cent increase in the cost of products claimed by the men amounted to about a 5.3 per cent increase in the total cost of living.[1] For this reason, and also because the personal element plays such an important part in determining the expenditures of a family, the railways maintain that the cost of living is incapable of accurate statistical expression, and that it is, therefore, impossible to determine the true rate of increase. As a further argument against the increase of wages on the basis of the advanced cost of living, the roads claim that although their "cost of living," too, is much higher on account of increases in wages, taxes, expenditures for improvements and materials, yet they are allowed no means of increasing their income. They are asked to meet every advance in the cost of living of their employees, to which advance they add nothing, and yet they are denied the privilege enjoyed by every other employer of labor of adding increased costs to the price of their only commodity or

[1] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Reply Brief, p. 7; Report of Board, p. 68.

service — transportation.[1] The railways assert that their advancing expenditures have forced them, in spite of the economies incident to more efficient management, to request advances in rates in order to make both ends meet. Thus the roads maintain that they are practically in the same position as the employees in regard to the increased cost of living, and that any increase in their cost of living by an advance in wages will, sooner or later, be reflected in the higher rates which the public will have to pay.[2]

The attitude of the employees and of the railways toward the increased cost of living as a principle governing wage advances has been discussed; it now remains to consider the position taken by the railway arbitration boards in Canada and in the United States. It is sometimes impossible to ascertain upon what basis a certain increase has been granted, for arbitration boards frequently report only the increases in absolute amounts or in percentages and make no comment as to the principles underlying their awards. There is a possibility that the arbitrators have been unable to find any principle which should govern wages and have therefore resorted to a compromise, or that such reasons as may

[1] *The Railway Library*, 1909, pp. 334–335; Western Firemen and Enginemen's Arbitration (1910), Proceedings, p. 2918.

[2] Eastern Firemen's Arbitration (1913), Proceedings, p. 2481.

have influenced them are incapable of withstanding the vehement criticisms of the side which considers itself the loser, and therefore out of caution are not set down in the award. Whatever the cause of this dearth of comment, it seems desirable that the boards should, in the interest of future arbitrations, describe the reasoning by which the conclusion has been reached, and thus build up a line of decisions, which, if not to be regarded as absolute and binding precedents, may at least serve as valuable guides in wage controversies of the future. Fortunately, some of the boards have set forth minutely the principles governing their wage awards, and this has been the case particularly in the large concerted movements of recent years.

In the East, the principle of standardization has been regarded by the men as of greatest importance [1] and increased cost of living as a basis has in consequence been less emphasized, the Eastern Engineers in 1912 omitting it altogether from their brief.[2] With this exception, however, it may be said that the increased cost of living has held the chief place in the employees' arguments; and it may therefore be assumed, in the absence

[1] F. H. Dixon, "Public Regulation of Railway Wages," Proceedings American Economic Association, 1914, Vol. XXVII, p. 251.

[2] Eastern Engineers' Arbitration (1912), Proceedings, p. 11.

of any statements of arbitration boards supporting another principle, that the recent wage advances to railway employees have been largely based upon the increased cost of living. It is impracticable to enumerate here all the cases in which this principle has been employed, expressly or implicitly, as the basis of wage advances; only a few will be mentioned.[1]

In 1910 railway employees in all sections of the United States received wage advances by arbitration based upon the increased cost of living. In March the switchmen employed on thirteen roads having terminals in Chicago received a ten per cent advance,[2] and this award was followed by a wage increase granted to the telegraphers on the "Big Four." [3] The engineers and firemen, in a concerted movement involving fifty-two Western railways, next obtained increases in wages

[1] Among the railway arbitration awards which have been governed partly by the increased cost of living, and which are not mentioned above are: in the United States: Southern Railway *vs.* Maintenance of Way Employees (1913); Chicago and Western Indiana and Belt Railway Company of Chicago (1913); Wheeling and Lake Erie, Wabash, Pittsburgh Terminal, West Side Belt Railway (1914); Chicago, Burlington and Quincy (1914); "Nickel Plate" Arbitration (1914); in Canada: Grand Trunk Railway *vs.* Machinists (1911); Canadian Pacific *vs.* Telegraphers (1912); Michigan Central *vs.* Telegraphers (1912); Canadian Northern *vs.* Conductors (1913).

[2] Switchmen's Arbitration (1910); Records, U.S. Board of Mediation and Conciliation, File No. 25.

[3] "Big Four" Arbitration (1910), *ibid.*, File No. 26.

of from ten to twelve per cent,[1] and later in the year the same classes of employees on the Denver and Rio Grande Railroad received advances by an award under the Erdman Act.[2] In June and July, 1910, the telegraphers on the Southern Railway [3] and on the Missouri Pacific [4] were granted increased wages, although the amount obtained by these awards did not fully meet the increased cost of living. In the East, the wages of conductors and trainmen were advanced by the Clark-Morrissey Arbitration involving the New York Central employees,[5] this board reporting that a new basis of living and living costs had been reached which called for substantial increases to these employees. As a result of this award, of the Baltimore and Ohio Mediation, and of a concerted movement of the conductors and trainmen on the other railways, increased rates for this class of employees were put in force on all roads in the Eastern District.[6] In 1913, the conductors and trainmen in the East received

[1] Western Firemen and Enginemen's Arbitration (1910), *ibid.*, File No. 29.

[2] Denver and Rio Grande Arbitration (1910), *ibid.*, File No. 39.

[3] Southern Railway Arbitration (1910), *ibid.*, File No. 30.

[4] Missouri Pacific Arbitration (1910), *ibid.*, File No. 33.

[5] *Railway Age Gazette*, Vol. XLVIII, No. 19, p. 1220.

[6] Cunningham "Standardization of Wages of Railroad Trainmen," *Quarterly Journal of Economics*, November, 1910, pp. 139–160.

a seven per cent advance, the board stating that it did not base its action entirely on the increased cost of living, although it regarded that principle as basic.[1]

In Canada, almost without exception, the Boards of Conciliation and Investigation appointed under the Industrial Disputes Investigation Act have recognized the principle of the increased cost of living as a basis for wage advances. In 1908, the board in the dispute between the Canadian Northern Railway and its engineers found that the employees were not paid enough to meet the necessities of life in view of the increased cost of living, and therefore recommended an advance in wages.[2] In the following year the same railroad threatened a reduction in the wages of its maintenance of way employees, but the board recommended, on account of the increased cost of living, that no reduction be allowed.[3] In 1914, the same employees demanded increased wages on the Canadian Northern, but the board, although recognizing the principle involved, refused to recommend the rates requested, as increases in living costs did not warrant such large ad-

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 34.

[2] Report, Department of Labour (Canada), 1909, Appendix, p. 298.

[3] *Ibid.*, 1910, Appendix, pp. 141–152.

vances.[1] In 1911, the maintenance of way employees on the Canadian Pacific Railway received an advance in wages based on the increased cost of living,[2] and the same employees on the Canadian Northern [3] and the Grand Trunk Pacific [4] obtained a similar advance in the same year, the boards being nearly the same as in the Canadian Pacific case. As a general proposition, it may be said that both in Canada and in the United States, arbitration boards have recognized the increased cost of living as a basis of wage advance. Thus, the Doctrine of Vested Interests is upheld, not only by the railway brotherhoods, but by the opinion of those actually confronted with the problem of finding a basis for the determination of wage advances.

The importance of maintaining the standard of living, both from the viewpoint of the employees particularly involved and of society at large, has been recognized and urged by economists. The opinion generally held is that the lower the standard of living of the people of any nation, the less their physical, economic, social, and moral well-being.[5] It

[1] Report, Registrar of Boards of Conciliation and Investigation, 1915, pp. 102–105.

[2] *Ibid.*, 1911, pp. 221–247.

[3] *Ibid.*, pp. 255–274.

[4] *Ibid.*, pp. 248–254.

[5] Report of Massachusetts Commission on the Cost of Living, 1910, pp. 523–525.

has been maintained with some justification that the superiority of the American laborer is due in the main to the fact that he is better fed, clothed, and housed than workmen in other countries. To lower this standard of living will unquestionably affect the laborer's productivity for the worse. A reduction in the standard, also, will endanger the stability of relations existing between employers and employees; one has only to turn to the numerous attempts of employers during the business depression of 1907 to reduce wages and the consequent attitude of labor to find sufficient proof of the correctness of this assertion. The lessening of national productiveness, the danger of industrial disturbances, and the physical and moral deterioration sure to follow from a reduction in the standard of living will affect every class of society, and therefore, the importance of at least maintaining the standard at its present level can hardly be overestimated. The railway brotherhoods, as well as other labor organizations, aim not only to maintain, but to improve the standard of living, and this policy should be regarded as one of the strongest forces making for the future development of the country — a policy, in the interest of the public welfare, to be encouraged and fostered by every possible means.

If it be admitted that the maintenance of the standard of living is socially expedient, it follows that any principle of wage advance which serves to keep wages on a par with increasing prices will meet the minimum demands of the employees and the best interests of society. Since the standard of living depends primarily upon the income received and the prices of those commodities which constitute the objects of expenditure in workingmen's families, the increase in the cost of those commodities is the most accurate index of the exact amount by which wages must be increased in order to maintain the standard at a level. Wages and prices, therefore, must move simultaneously and on parallel lines, and arbitration boards, in determining the amount of wage advance, should seek to effect this result.

For the successful application of the increased cost of living principle to wages, however, trustworthy statistics of the advance in wages and in the retail prices of commodities over a series of years, and data concerning consumption in workingmen's families must be obtained. Unfortunately, these statistics are not always available, and those that are in existence are frequently so fragmentary and unreliable that little dependence can be placed upon them. Statistics of

consumption are probably the most complete and trustworthy of any of the three above mentioned. These give the cost and percentage of total expenditure for a given income of the various commodities which workmen ordinarily purchase, the headings being usually food, rent, clothing, fuel and light, and sundries. In applying the principle of the increased cost of living the percentage advance in the retail price of the commodity is weighted by the percentage which the expenditure for that commodity bears to the total expenditure at a given income. Thus the proper importance is placed upon those commodities like food, which comprise the larger part of family expenditures. Doubt has often been expressed as to whether it is possible to ascertain the cost of various items in a budget representing a certain income. There is practically universal agreement nowadays that a reasonably accurate budget for any income can be constructed, if it is based upon a given social class and is relative to a given time and place. Statistics fulfilling these requirements have been gathered and published, and the similarity of the results seems to bear out the above opinion as to the accuracy of budget statistics. The Federal Government, various state labor bureaus, committees working under the di-

rection of settlement houses, and private investigators have all contributed data relating to budgets. The most comprehensive statistics on this subject are those embodied in the Eighteenth Annual Report of the United States Commissioner of Labor (1903) based on returns from 11,156 families. Probably the most careful statistics are those collected in the Greenwich House investigation and in the Chapin report on the standard of living in New York.[1]

The results of these three investigations are strikingly similar, those variations which do appear being explained by the fact that conditions in New York City differ from those in other sections of the country. For example, for incomes from $800 to $900, the expenditure for food varies in the three investigations from 41.4 to 45.8 per cent of income; for rent, from 17.1 to 20.7 per cent; for clothing, from 10.3 to 14 per cent; and for fuel and light from 5 to 5.4 per cent.[2] These percentages are sufficiently accurate for the purpose of applying the principle of the increased cost of living. What is needed, however, is the collection of budget statistics at frequent intervals, for in a period of ten or

[1] More, *Wage-Earners' Budgets;* Chapin, *Standard of Living among Workingmen's Families in New York City.*

[2] Eighteenth Annual Report, U.S. Commissioner of Labor, pp. 535, 592; More, p. 58; Chapin, p. 70.

more years the consuming habits of families may undergo such a change that the former percentages will not represent the true proportion of total income expended for a given commodity. Again, there should be a classification of laborers, and a separate budget for various incomes calculated for each class. It may happen that railway employees expend a larger proportion of their wages on clothing and rent than do workmen in other industries.[1] Such differences between various classes of the industrial population should be taken into account in applying the principle of the increased cost of living, for variations in the per cent of total income expended for a given commodity will be reflected in the amount of the advance in the cost of living. Finally, the budget statistics should cover a large number of families in both the East, West, and South, for, just as there are variations in consumption between different classes of labor and for different amounts of income, so there are consumption variations between sections of the country due to climatic and other local conditions.

The only available statistics of the changes

[1] For example, conductors must spend an excess over the average for rent and clothes on account of the number of layovers at the end of runs, and the need of presenting a good appearance while on duty (E. C. Robbins, "The Railway Conductors," Columbia University Studies, Vol. XL, No. 1, pp. 89–90).

in the retail prices of food from year to year are those published by the United States Bureau of Labor Statistics. In the railway arbitrations, the employees and the employers usually present exhibits based on these statistics; in some few cases, however, the railways have had recourse to the figures of the Bureau of Railway Economics, Dun's and Bradstreet's Agencies. From 1890 to 1907 the price indexes published in the bulletins of the United States Bureau of Labor were based upon returns from sixty-eight localities for thirty staple food articles, weighted according to the average consumption of the various articles in workingmen's families as shown by the Eighteenth Annual Report of the United States Commissioner of Labor. From 1907 on the indexes were based only upon fifteen articles of food, on which price quotations were collected from about forty localities.[1] Owing to the criticism that it was impracticable to calculate the real advance in the cost of food from 1890 down to the present time, on account of the fact that the number of food articles was not the same for the entire period of years, the Bureau recalculated the indexes from 1890 on, using the same fifteen articles of food for the earlier dates

[1] For method of calculating the old index numbers, see Bulletin, U.S. Bureau of Labor Statistics, No. 156, Appendix A, pp. 357–366.

as were employed as the basis for indexes after 1907.[1] In the latest bulletins of the Bureau of Labor Statistics, a new method of computing index numbers has been adopted, designed to show changes in actual, rather than in relative prices, and, by shifting the base from the average of 1890–1899 to the last completed year, to render a comparison with prices in other years possible without danger of miscalculation.[2] Apart from food statistics, the Bureau since 1907 has collected data concerning the retail prices of coal, anthracite and bituminous,[3] and has recently begun the gathering of gas prices.[4]

Food and coal, then, are the only commodities for which retail price statistics over a period of years are available, and these two together represent approximately only thirty-five per cent of the total expenditure in workingmen's families.[5] It is evident, therefore, that the railways' assertion that the increase

[1] This change made in Bulletin, U.S. Bureau of Labor, No. 105.

[2] Bulletin, U.S. Bureau of Labor Statistics, No. 156, pp. 5–14, Appendix A, pp. 357–380. See also *American Economic Review*, December, 1915, pp. 928–931.

[3] First published in Bulletin, U.S. Bureau of Labor, No. 105, pp. 27–28.

[4] *Ibid.*, pp. 28–30.

[5] According to the average budget, income $851 (More, p. 258), food represents an expenditure of 43.4 per cent, and fuel and light, 5.1 per cent. Since the food articles of the Bureau's indexes represent only about two thirds of the total expenditure for food, the total percentage for food and fuel would amount to about 35 per cent.

in the cost of living cannot be determined with any degree of exactness is to some extent justified. Without accurate statistics of the retail prices of food, rent, clothing, fuel and light, which together comprise almost eighty per cent of the total family expenditure,[1] it is impossible to use to the best advantage the principle of the increased cost of living in arbitration proceedings. It may be well to quote from the report of the board in the arbitration of 1913 involving the Southern Railway and its maintenance of way employees in order to show to what expedients the lack of proper official statistics reduces arbitration boards when attempting to find the amount of the advance in the cost of living. After obtaining the increase in food prices from the bulletins of the Bureau of Labor, the board assumed that on ten per cent of the employees' expenses there had been no increase; assumed again that eight per cent was spent on shoes, on which "we gather from evidence there has been the large average increase of 25 per cent." Then, since "dry goods and clothing" was the "most comprehensive and representative" of the terms used in the employees' exhibits, the

[1] In the average budget income, $851, these items total 77.5 per cent: food 43.4, rent 19.4, clothing 10.6, light and fuel 5.1. The remaining items are insurance 3.9 per cent and sundries 17.6 per cent.

board assumed that the twelve per cent increase in that item might well be applied to the forty per cent of expenditures still unaccounted for, concluding with the statement, "This calculation is not scientific, but it is the best we can do with the insufficient data before us." [1] It must be said that this board at least attempted to use other figures than those for the increases in the prices of food, which, one is given to understand in other exhibits and awards, constitute the entire increase in the cost of living. The statement of Mr. Perham, the Telegraphers' representative in the "Nickel Plate" Arbitration (1914) that "the government reports upon the subject [cost of living] are scarcely adequate for a consideration of this subject, although in a manner they are informing" [2] sums up the value of the existing official statistics to an arbitration board.

There is urgent need for the regular collection of statistics of retail prices of food by the Federal Government and by the various state labor bureaus, working on some uniform plan. The number of articles selected should be greater than fifteen, for these comprise only about sixty-four per cent of the total food consumption, and therefore the

[1] Southern Railway Arbitration (1913), Report of Board, pp. 8–10.

[2] "Nickel Plate" Arbitration (1914), Proceedings, p. 131.

figures now existing are not sufficiently comprehensive to give a true index of the increase in the cost of food. The United States Bureau of Labor Statistics is now endeavoring to collect price data on thirteen additional articles of food,[1] and when these are included, the general price index will more adequately represent the actual advance in food prices. Food statistics alone do not indicate the full amount of the cost of living, for the items of rent, clothing, fuel and lighting comprise about thirty-five per cent of the total expenditure.[2] The Federal Bureau has already published fuel and light statistics and is now collecting data for various articles of dress and house furnishing.[3] Nothing, however, has been done in regard to rents. In 1910, the Canadian Department of Labour began an investigation of rents of representative workingmen's dwellings, with and without sanitary conveniences. The quotations for these are taken each month in forty-five cities of 10,000 population and upwards.[4] It seems that this method might be applied with good results in the United States. Be-

[1] Bulletin, U.S. Bureau of Labor Statistics, No. 156, Appendix A, p. 373.

[2] See above, p. 103 (note).

[3] Bulletin, U.S. Bureau of Labor Statistics, No. 156, Appendix A, p. 373.

[4] Department of Labour (Canada), "Wholesale Prices in Canada, 1911," p. 222.

fore the principle of the increased cost of living as a basis of wage advance can be applied satisfactorily in arbitration proceedings, the board must have at its disposal statistics of the increase in the prices of food, rent, clothing, fuel and light over a period of years, so that it may determine with some exactness what has been the actual advance in the cost of living.

As to statistics showing the increase in wages, conditions are even more chaotic than in the case of the cost of living. It is difficult to determine the exact wages of engineers, firemen, conductors, and trainmen, for the method of payment is neither the pure time nor the pure piece system.[1] For instance, the passenger engineers, by the award of the recent Western Arbitration Board (1915), are to be paid, according to weight on drivers of the engine used, from $4.30 to $5.00 for a day's run, that is, for one hundred miles or less, or six hours and forty minutes or less. Thus on a run of less than a hundred miles, or for less than six hours and forty minutes duration, the wage received would be the same as if the full distance had been run or the full time worked. On the other hand, if the run exceeds this distance or time, overtime

[1] D. A. McCabe, *The Standard Rate in American Trade Unions*, pp. 60–70, 72–76, 186 (note).

rules apply and the engineer draws pay in excess of the minimum rate set in the schedule. Thus, an engineer working on the same run day after day, might, if the time consumed were greater than six hours and forty minutes and varied from day to day, receive a different sum for each day's work. His total wage, therefore, cannot be determined by multiplying the rate by the number of days worked. Further confusion arises from the fact that, in unassigned service, an engineer may have a different run from day to day, with a different weight engine, or again, an engineer may be laid off one day and yet make the equivalent of two days' wages the next.

In determining the increase in railway wages for the purpose of ascertaining whether wages have kept pace with increasing prices, the question arises as to whether wages mean earnings or rates. The railways maintain that the cost of living argument is fundamentally directed to the establishment of the proposition that earnings have not kept pace with the increases in the prices of commodities, and therefore wages, in connection with the cost of living, mean earnings.[1] The employees, on the other hand, contend that

[1] Western Engineers and Firemen's Arbitration (1915), Railways' Brief, pp. 23–25; Proceedings, pp. 7557–7558.

the computation of the increase in wages should be based on the assumption that wages mean rates of pay, and that the high earnings which the railways show for the men are a result of the excessive hours worked.[1] They claim that it is not valid to assert that wages have kept pace with the increase in prices, if an employee must work continually over the time set for the minimum day in order to make his wages bear the increased prices of commodities.

This argument of the employees seems essentially fair, but it is impossible to determine the advance in wages of a class of employees in a district as large as the West, on the basis of rates. In order to strike an average of the wages of engineers on a rate basis, it would be necessary to weight each different rate by the number of employees receiving it. When the number of rates according to the size of the locomotive, and the number of employees who may operate different locomotives from day to day are considered, it is evident that no such basis for computing wages can be adopted. In the Eastern Engineers' Arbitration (1912) the employees submitted an exhibit designed to show the percentage increase in wages on the basis of rates on five

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7736.

roads in the Eastern District. On only one of these roads — the Baltimore and Ohio — were they able to estimate the percentage increase from 1900 to 1910.[1]

The railways have used the statistics of "average daily compensation" published by the Interstate Commerce Commission to show the increase in the earnings of employees over a period of years. These statistics are compiled from reports of the carriers to the Commission, and the average daily compensation is determined by dividing the aggregate amount paid each grade of employment, engineers, conductors, etc., by the total number of days worked by the employees of that grade. The number of days worked is determined by various methods on the different railways. The employees have objected strongly to the use of these statistics on the ground that the methods for computing the number of days worked are so numerous as to preclude the possibility of a valid comparison between one road and another.[2] Again, the aggregate compensation includes payments for overtime, and thus the average daily compensation represents, not the rate for a day's work, but the earnings of employees who may be work-

[1] Eastern Engineers' Arbitration (1912), Engineers' Exhibits, 67.
[2] Eastern Firemen's Arbitration (1913), Proceedings, pp. 1700–1762.

ing considerably over the minimum day.[1] It is claimed further that the figure for the average daily compensation of an engineer, for instance, does not represent a true average, for all engineers are lumped together, — passenger, through freight, local freight, switching, etc., — and no account is taken of the various rates paid to engineers within these classes of service, based on differences in driver weights. Mr. P. H. Morrissey, employees' arbitrator in the Eastern Engineers' Arbitration (1912) characterized these statistics as used by the board in that case as "insufficient, unreliable, inaccurate, and misleading." [2]

These objections are valid, and any comparison of one road with another, or any use of these statistics as a basis for calculating the amount of compensation received by the respective grades of employment would be liable to serious objection. However, it seems that they may be taken as a fair index of the percentage increase in general railway wages over a period of years, and that, after all, is what is needed for the application of the increased cost of living. The railway wage statistics of the Commission would be of much greater service in arbitration proceedings if

[1] Eastern Engineers' Arbitration (1912), Report of Board, p. 114.
[2] *Ibid.*, p. 114.

some one method of computing the number of days worked could be agreed upon and used on all the roads, and if employees could be sub-classified according to kind of service — passenger, through freight, etc. If these two changes were made, it would be possible to compare the roads throughout a territory, and to determine the amount of increase over a period of years in the wages of the employees engaged in each kind of railway service.[1]

In addition to the difficulty of applying the principle of the increased cost of living on account of the lack of adequate statistics, other drawbacks to its application have been brought forward in arbitration proceedings. The railways have questioned whether this principle is equally applicable in concerted movements as well as in those disputes involving only one road. In the Western Engineers and Firemen's Arbitration (1915) it was argued that in a proceeding wherein the award was to be made applicable to apprentices as well as to men earning as much as $3700 a year, the board could not work out

[1] The Interstate Commerce Commission has recently made radical changes in its statistics of railway employment, the results of which will appear in its report for the fiscal year ending June 30, 1915. The employees are classified into 68 instead of 18 occupations and some of the more important grades are sub-classified according to the kind of service — passenger, freight, yard, etc. The number of hours instead of the number of days worked is to be reported in the future. The new statistics will undoubtedly be of much greater value than those formerly published.

a conclusion of general application from the premise of the increased cost of living.[1] In the Chicago, Burlington and Quincy Arbitration (1914), on the other hand, the representative of the road held that "arguments for increases in rates of pay based upon increased cost of living should be heard only in concerted or general movements affecting all individuals in a particular class of service." [2] The question of applicability may be considered from the viewpoint of the territory concerned or the character of the employees involved. As to the territory, it may be said that statistics of food, rent, etc., cannot be gathered from every town or section in the United States. But if official statistics are collected covering a number of localities in all the States, a sufficiently accurate estimate of the increased cost of living may be obtained for any locality, state, or railway district into which the country is divided. If the statistics cover a sufficient area, it makes no difference whether the principle of the increased cost of living is applied in a single or in a concerted movement. From the standpoint of the employees concerned, it is obvious that, where wages are so different in

[1] Western Engineers and Firemen's Arbitration (1915), Railways' Brief, p. 23.

[2] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 9493–9496, 9773.

amount as in movements involving, for instance, conductors and trainmen or all grades of engineers, the percentage increase in the cost of living is not the same for all employees. It is possible, however, to classify conductors and trainmen and other employees into income groups, the percentages of food, rent, etc., expenditure of which may be found by reference to budget statistics. The percentage advance in the prices of food, rent, etc., weighted according to the percentages of expenditure in the different budgets, will then give the actual percentage increase in the cost of living for each income group. The increased cost of living principle should be applied uniformly, account being taken, however, of the fact that the percentages to total income expended for various items vary with income.

Another question which has been presented in railway arbitrations, merely as a possibility and never as an actual fact, is whether wages should be reduced if the cost of living is decreasing. The chairman of the Board of Conciliation and Investigation in the dispute between the Canadian Pacific and its maintenance of way employees (1914) held that if the principle of the increased cost of living were allowed to govern wage advances logic demanded a proportionate decrease when

living costs were lessened.[1] The same argument was brought forward by the Western railways in their dispute with the Firemen and Enginemen in 1910.[2] It has been argued that "if prices fall and wages remain unchanged, the cost of production on account of wages may become disproportionate and the crippling of industry result." [3]

The question as to whether or not wages should decrease in proportion to the decline in prices must be approached from two angles, according as the particular decline of prices in question is part of a long downward trend, or merely an incident of a brief period of business depression. The general movement of prices has shown an alternate rising and falling trend extending ordinarily over a considerable number of years. For instance, from about 1789 to 1809 prices rose rapidly, but there followed a period of falling prices lasting until 1849. In that year another upward trend began which continued for about twenty-five years, only to be broken by the long period of falling prices lasting from 1873 to 1896. Since 1896 there has been a remarkable advance in prices, and, from all appear-

[1] Canadian Pacific *vs.* Maintenance of Way Employees (1914), in *Labour Gazette* (Canada), February, 1914, p. 907.

[2] Western Firemen and Enginemen's Arbitration (1910), Proceedings, p. 2920.

[3] Department of Labour (Canada), "Wholesale Prices in Canada," 1890–1909, p. 435.

ances, the end is not yet.[1] Within these long time movements, which may be explained by changes in money and in trade, occur periodic short time fluctuations, due in the main to the cumulative effect of contraction in demand, lessened profits, tight money, and increased business costs. With alternate periods of prosperity, crisis, and depression, prices rise, remain stable for a time, then fall only to rise again, the same phenomena being repeated over and over. Thus, price movements are of two distinct kinds, and falling prices, therefore, may be an incident either of the long time downward trend or of the short time period of business depression.

An equivalent and simultaneous decrease in wages and prices does not appear to violate the principle upheld in the preceding pages — the maintenance of the standard of living. A reduction in wages corresponding to the decline in the prices of those commodities consumed by the average workingman's family will not lower the laborer's standard of living. In spite of this fact, however, employees have always strenuously resisted any reduction in money wages, even though they may be fully aware of the decline in prices. This resistance is based upon the failure of employees to distinguish clearly the

[1] Irving Fisher, *The Purchasing Power of Money*, pp. 240–246.

difference between real and money wages. That a decline in wages corresponding to the decrease in prices will not lower the standard does not appeal to the reason of the average employee, for the decline in prices at best is something intangible and not easily computed, whereas a reduction in money wages is definite and can be measured exactly by the employee himself. For this reason, a reduction in wages corresponding to the decline in prices is never accepted without protest from the men, and is always attended with serious friction between employers and employees. This opposition on the part of labor has had its effect upon wage reductions during long periods of falling prices, for there has always been a noticeable lag in wages, so that at the end of the period wages have not been reduced by the same ratio as the decline in prices.[1] A long downward trend of wages, therefore, has tended to operate as a gain to labor and to bring about an advance in the standard of living.

Arbitration boards should keep the above tendencies in mind when they are confronted with demands for reductions in wages corresponding to the decline in prices. They should be influenced by the desire to advance

[1] Report of Massachusetts Commission on Cost of Living, 1910, pp. 88–89.

the standard of living of any grade of employees whenever possible, and since a period of declining prices offers an opportunity of effecting this desirable result by refusing a proportionate decrease in wages, boards may well adopt this principle, especially as friction between employers and employees may be avoided, and as the boards' award will correspond closely to the normal relation of wages and prices evident in former periods of declining prices. No definite rule as to the proper ratio of decrease in wages can be formulated, for the movement of wages must depend upon the relative abruptness of the decline in prices. The most that can be said is that the wage decrease, if any, should be at a smaller ratio than the decline in prices.

When the price movement is a short time decrease accompanying business depression, wage reductions on the basis of decreased cost of living should not be allowed. In the preceding chapter it was shown that a wage reduction during periods of depression would operate to counteract certain forces of readjustment upon which the hope of business expansion and of relief from stagnation largely depends. Furthermore, since periods of depression are usually temporary and are followed by a rapid rise in prices during business revival, wage reductions would simply

occasion immediate demands for increases in wages based on the increased cost of living caused by the return of business prosperity. Therefore, during periods of business depression, reductions in wages demanded on the ground of declining living costs should be disallowed.

The underlying principle of the increased cost of living argument is the maintenance of the standard of living. Taken by itself, therefore, it has no claim as a basis for determining what share of the product rightfully belongs to the laborer; it merely aims to keep real wages at a constant level. Thus, the assumption upon which it rests is that the wage received prior to the demand for advance is a fair and adequate wage. Theoretically viewed, the principle of the increased cost of living equalizes real wages from year to year, and provides no advance in the employees' standard of living. As an actual fact, however, the standard of living of any grade of employees is rarely stationary, for even though the income factor remains constant, there is a possibility of development in the other factors governing the standard of living, the net result of which will be an advance in the employees' condition. The increase of scientific knowledge, inven-

tions, and more effective methods of production have served to better the living condition of society in general. Rapid strides in medicine and sanitation, and improvements in plumbing and drainage have made healthy, sanitary surroundings the rule, and not the exception. Improvements in the methods of producing and distributing gas and electricity have so cheapened these commodities that they are fast displacing oil and other means of illumination. A few years ago, only the rich could purchase automobiles; now prices are decreasing steadily, and these luxuries are within the reach of successively lower classes in the scale of economic welfare. Amusements are many and cheap, and the increasing numbers of municipal parks and free playgrounds give ample opportunity to all classes for heathful recreation. These are but a few instances of the influence of the advance in civilization upon the standard of living. Even if there be no increase in real wages, the advantages accruing to laborers through the advance in civilization will serve to better the general conditions under which they live.

The influence of the class of society to which an individual belongs and of the personal factor upon the standard of living has already been mentioned. Ambition to rise

out of his class, more efficient management of the income, greater sobriety and industry all serve to advance a workingman's standard of living. The development of these qualities is the aim of labor organizations, and their educational value to the country can scarcely be overestimated. Some of the railway brotherhoods help their members to become more efficient by conducting technical courses through the medium of their monthly publications.[1] The high standard of morals and health required for membership in the brotherhoods; the intimate association of members and their wives in the locals; and the suggestions exchanged in the Women's Auxiliaries cannot help but increase efficiency in home management and make for a wiser expenditure of income. The railway organizations are doing a splendid work in developing their members. President W. G. Lee, of the Brotherhood of Railroad Trainmen, in an address at a convention of the Brotherhood of Locomotive Firemen and Enginemen, said that when "ambition demands a better living and better social conditions, the workman usually finds the way. The organizations of labor have educated their members in the way of better living standards with all

[1] For example, see the monthly magazines of the Brotherhood of Locomotive Engineers and the Brotherhood of Firemen and Enginemen.

that accompanies them, and they have also provided the way to secure these advantages."[1]

As to the effect of the application of the principle of the increased cost of living upon the public, it is claimed that it will result in a continuous round of wage demands, which will be passed on to the public in the form of higher prices. The chairman of the Board of Conciliation and Investigation in the dispute involving the Canadian Pacific and its maintenance of way employees (1914) stated that "the increased cost of living is, unfortunately, a thing that seems to thrive upon itself; the increased cost of living requires higher wages and higher wages increase the cost of production, and the increased cost of production causes increased cost of living."[2] Thus, when the necessity for a new wage increase arises, the employer must recoup himself by increasing the price of his products. Numerous employers of labor testified before the Massachusetts Commission on the Cost of Living that the underlying cause of the rapid advance in the cost of commodities was the labor organizations which forced up costs of production by increasing the wages of their members.[3] That higher wages

[1] *Locomotive Firemen's Magazine*, August, 1910, p. 240.

[2] *Labour Gazette* (Canada), February, 1914, p. 906.

[3] Report of Massachusetts Commission on the Cost of Living, 1910, pp. 303, 438, 442–443.

mean increased prices is the opinion of many investigators of the workings of the Australasian arbitration acts,[1] and some question the expediency of these acts for that reason. Other authorities, however, hold that increasing wages are not necessarily reflected in increased prices. Both the Massachusetts Commission and the Select Senate Committee on Wages and Prices reported that labor unions, although advancing wages and reducing hours, had not apparently been a serious factor in contributing towards advancing prices; but it was stated that a well-grounded opinion as to the actual effect of wages upon the cost of production could not be expressed.[2] According to Australasian experience, the influence of higher wages upon prices has varied greatly with different industries, and the general opinion there is that increases in wages have, to a certain extent, increased prices, but that it is impossible to say whether the increase has been proportionate.[3]

[1] Aves, *Wages Boards*, p. 56, Appendix, pp. 184–187; G. S. Beeby, "Artificial Regulation of Wages in Australia," *Economic Journal*, Vol. xxv, No. 99, p. 327.

[2] Report of Massachusetts Commission on the Cost of Living, 1910, pp. 471–472; Select Senate Committee on Wages and Prices, Vol. I, pp. 122–123.

[3] Aves, p. 102; F. A. Russell, "Industrial Arbitration in New South Wales," *Economic Journal*, Vol. xxv, No. 99, pp. 344–354; *Harvard Law Review*, Vol. xxix, No. 1, p. 37; Bulletin, U.S. Bureau of Labor Statistics, No. 167, pp. 136–137.

In theory, it may be said that increased wages will increase costs, and consequently prices, if the efficiency of labor remains constant and if no economies in production are made to offset the advanced costs. Conversely, increased prices will not result if the efficiency of labor is increased by the advanced wage, and if the increasing costs of production force employers to introduce more efficient methods of operation. There is a limit, however, to the extent to which increased labor efficiency and skillful management can be carried, and when this limit is reached, if the industry is to be carried on, any increase in wages will of necessity be shifted to the public in the form of advanced prices.[1]

Many railway officials claim that the railways of the United States have reached this limit, and that operating costs have advanced so rapidly on account of incessant wage demands, increased taxes, large expenditures for terminals, and for various safety appliances and regulations required by law, that, if the roads are to continue in operation with-

[1] Report of Massachusetts Commission on the Cost of Living, 1910, pp. 472–473; Hooker, "The Course of Prices at Home and Abroad," *Journal, Royal Statistical Society*, December, 1911, p. 15; Laughlin, "Causes of the Changes in Prices since 1896," Proceedings, American Economic Association, 23d Annual Meeting, December, 1910, p. 35.

out serious loss in efficiency, rates must be advanced.[1] Railway labor has also urged increased rates for the roads, because the brotherhoods believed that their members would stand a better chance for wage advances if the revenues of the railways were increased.[2]

It is impossible to state whether or not the railways have actually reached the point where rates must be increased and where labor cannot be made more productive and no further economies introduced. Rates in the Eastern District have recently been raised five per cent. The exhibits of the Western railways in the Engineers and Firemen's Arbitration of 1915 showed that in three years ending June 30, 1913, $660,000,000 had been spent for additions, extensions, and for increasing the efficiency of train movements by grade reductions, elimination of curves, heavier rails, etc.[3] In the Western Advance Rate Case (1910) President McCrea, of the Pennsylvania, testified that in spite of the

[1] Eastern Firemen's Arbitration (1913), Proceedings, p. 2481; Advanced Rate Hearings (1910), S. Doc. No. 725, 61st Cong., 3d Session, pp. 292, 4297, 4346; F. H. Dixon, pp. 245, 252; *Railway Age Gazette*, Vol. LVII, No. 19, pp. 865–866.

[2] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7741; *The Railroad Trainman*, July, 1912, p. 637; *Locomotive Firemen's Magazine*, September, 1910, p. 423.

[3] Western Engineers and Firemen's Arbitration (1915), Railways' Brief, pp. 105–106.

wage advances, that road had been able to pay regular dividends and to lay aside a large surplus by introducing such economies as grade reductions, larger locomotives, and cars of greater capacity.[1] In view of the recent rate advances, and of the large expenditures of the roads for more efficient operation, and of the fact that at present the railways are overwhelmed with shipments for the countries at war in Europe, it seems unlikely the application of the increased cost of living principle as a basis of wage advance will necessarily result in the payment of higher rates by the public.

The question of the ability of the railways to pay wage advances based on the increased cost of living principle has come before numerous arbitration boards in Canada and in the United States. The attitude of the boards in the two countries has been very different. The usual practice in the United States has been to deny the existence of any relation between wages and railway earnings, and profitable and unprofitable roads alike have been forced to pay similar wages and to grant identical increases. In Canada, on the other hand, the boards have frequently cut down wage advances or have disallowed them altogether on the ground that the road is not in a

[1] Western Advance Rate Case (1910), Vol. IV, p. 2298.

strong financial condition. In periods of business depression, the custom in Canada has been to dismiss the demands of the employees and to recommend their consideration at some more opportune time.

In times of normal business activity, the inability of the roads to pay wage advances based on increased living costs should not be considered, for the maintenance of the standard of living is of paramount importance not only to the grade of employees concerned but to the welfare of the whole nation. The effect of such action on the part of arbitration boards would be either to force a few employers out of business, or, if the entire industry were at the limit where any increase in wages meant an increase in prices, to place an additional burden upon the public. It seems that the effect of either of these eventualities upon the well-being of the nation as a whole will be less harmful than a reduction in the standard of living.

During periods of business depression, demands for wage advances based on the increased cost of living principle are not likely to be presented, for prices are usually declining at such times. If the depression occurs during one of the long time upward movements of prices, it may happen that, even taking into account the fall of prices due to

the depression, there is an increase in the cost of living since the last wage adjustment, and the employees may be entitled to a wage advance in spite of the business depression. An advance in wages on the basis of the increased cost of living, however, should not be granted during periods of business depression. These are temporary phenomena, and employees should hold over their demands until a more propitious time. Railway employees, as a rule, have refrained from requesting increases during periods of depression. Thus, after the formation of the Eastern Association of General Committees of the Conductors and Trainmen in 1907 and the formulation of a notice to be served on the railways early in 1908, it was decided to defer action until a more opportune time and the demands were not made until January, 1910.[1] A circular letter of the Southern Association of the same brotherhoods distributed in 1905 said, "It is, of course, necessary always to give proper consideration to business conditions and the appropriateness of the time at which requests are preferred." [2] In periods of business depression, therefore, employees would best serve their own interests by holding over their demands until a favorable

[1] Proceedings, Railway Conductors, 1909, pp. 89–96.
[2] *Ibid.*, 1905, pp. 80–81.

opportunity presents itself, and if, during periods of depression, demands are made on the basis of the increased cost of living, arbitration boards should refuse to grant any increases.

CHAPTER IV

INCREASED PRODUCTIVE EFFICIENCY

In the majority of the arbitrations under the Erdman and Newlands Acts, the railway employees based their demands for wage advances upon the principles of standardization, the living wage, and the increased cost of living. In the Denver and Rio Grande Arbitration, November 1, 1910, increased productivity arising out of improvements in the train machine was brought forward as a basis of wage advance, and from that time on the principle of increased productive efficiency has held a strikingly important position in succeeding arbitrations. Standardization aims to establish a standard rate within a given area in order to prevent less prosperous roads from paying wages lower than the standard. The principle of the living wage contemplates the grant of compensation to low-paid men sufficient to secure the normal standard of living. The basic aim of the increased cost of living principle is to prevent a reduction in real wages and to maintain the standard of living of all grades of employment. Increased productive efficiency, however, the railway employees claim, is a posi-

tive, constructive principle for securing to the employees a proper measure of participation in economic advancement. As Mr. W. S. Stone, President of the Brotherhood of Locomotive Engineers, says, "It is used to designate an economic right and a principle of economic justice." [1]

The principle of increased productive efficiency has its foundation in the advancing productive capacity of the train machine. Within the past ten or fifteen years the size and power of locomotives, the capacity of freight cars, the average tonnage of freight trains, and the average length of both freight and passenger trains have increased enormously. In 1910 the average freight car capacity in the Eastern District had increased 28.6 per cent over 1902,[2] and the tractive power of locomotives on all railways increased 48 per cent from 1902 to 1914.[3] From 1902 to 1911 the average freight train load in the Eastern District increased from 264 to nearly 460 tons or an advance of over 25 per cent.[4] In 1902 the average number of cars

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7747.

[2] Eastern Firemen's Arbitration (1913), Supplemental Report of International President, p. 1134.

[3] Bulletin, Bureau of Railway Economics, No. 66, p. 48; No. 81, p. 41.

[4] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, p. 54.

to a passenger train was 3.95, in 1911 it was 5.23.[1] There is no doubt that the train machine is more productive now than a decade ago, for the increased size of locomotives, cars, and trains has permitted the carriage of a greater tonnage or of a greater number of passengers in one train movement. This increased productive capacity has resulted in large advances in revenues. In 1913 the operating revenues of the railways of the United States totaled over three billion dollars, in 1900 about one and a half billions.[2] It is true that other factors have contributed to this vast revenue gain; for example, the increase in business, more efficient office methods, improved terminal facilities, increased rapidity and safety of train movements through the elimination of curves and the reduction of grades, and the installation of interlocking and block signals. The increased productive capacity of the train machine itself, however, is chiefly responsible for the advance in revenues.

These revenue gains, of course, have been made possible by the increase in railway output, the larger number of tons and passengers transported by means of the more efficient

[1] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, p. 14.

[2] Statistics of Railways of the United States, Reports of Interstate Commerce Commission, 1900, p. 72; 1913, p. 48.

train machine. Thus, if the efficiency of any train on a given run is increased by the substitution of a locomotive of greater tractive power and cars of larger capacity, the result is an increase in the output of that train and in the revenue received from that one train movement.

The employees claim that if the efficiency of the train machine is increased, the efficiency of those employees in any way connected with its operation is increased in a like degree, for, as the railway is receiving a greater number of ton miles and passenger miles per train, so it is receiving a greater number of ton miles and passenger miles per train crew. Therefore, the employees assert, since they are more productive than formerly, their increased productive efficiency to the railway should be recognized by participation in the increased output to which they have directly contributed. The fundamental claim of the employees, then, is that they should participate in revenue gains according to their respective contributions to increased output. Thus, President W. S. Stone in the Western Engineers and Firemen's Arbitration (1915) said that "rates of pay should be adjusted to the value of the contribution in terms of output, and a corresponding participation given to employees in

the value of the output";[1] and again, "If we are to have a proper measure of economic well-being and advancement, . . . it is evident that the principle of productive efficiency must be recognized in fixing wage payments, and the financial or corporate control of the transportation industry must be so regulated and adjusted to democratic institutions that a proper measure of participation in revenue gains may be made possible to railroad employees." [2]

This fundamental principle of participation in revenue gains according to specific contribution to output is applicable to all railway employees either remotely or directly concerned with the operation of the improved train machine. The contribution to increased output of each grade of railway employment is to be determined, each employee of that grade receiving a share of the total increased output imputable to his grade of employment. The train service employees, however, — the engineers, conductors, firemen, and trainmen — those directly connected with the operation of the improved train machine, are to receive in addition to the share of increased output imputable to each of these grades by reason of their in-

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, pp. 7745–7746.

[2] *Ibid.*, p. 7747.

creased productive efficiency, a further share in revenue gains, measured by the increased labor, risk, and responsibility which the operation of larger locomotives and trains entails upon these particular grades of railway labor. The conductors and trainmen assert that with the larger cars in service they have more passengers or more tons of freight in their charge and that their responsibility is correspondingly increased. The firemen claim that locomotives of greater tractive power require the shoveling of more coal; and the engineers maintain that the larger the locomotive, the more complicated the mechanism under their control, and the larger the train, the greater the number of passengers and the amount of freight for which they are responsible.

Increased labor, risk or responsibility occasioned by the improvement in the train machine as a part of the principle of productive efficiency concerns the train service employees only, and it is used solely as an argument for the payment to the train service employees of a larger relative share in the revenue gains than that due to other grades of railway labor, whose work, hazard, and responsibility are not increased by larger locomotives, cars, and trains. This point was clearly presented in the Western Engi-

neers and Firemen's Arbitration (1915), in which the position of the employees was stated to be "that all railroad employees, whether their work increased or not, and whether they were remotely or directly connected with improved operating conditions, should participate in revenue gains," and in addition "that those classes of employees who bore the direct burden and responsibility of the increased productive efficiency, such as the engineers and firemen in railroad operations, should have a proportionately larger share." [1]

It has been necessary to go into some detail in the explanation of the employees' conception of increased productive efficiency on account of the difference of opinion as to the real meaning which they attach to it. Railway representatives have referred to it as an "elusive phrase" [2] on the ground that it is sometimes "treated in the employees' evidence as wholly independent of the question of increased labor and responsibility, and at other times as arising out of or caused by such added labor and responsibility." [3] Counsel for the Western roads in the recent arbitration involving the Engineers and Firemen stated that " the whole question of productive

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, p. 7731.

[2] *Ibid.*, Railways' Brief, p. 4. [3] *Ibid.*, Railways' Brief, p. 4.

efficiency, in its last analysis, comes down to the simple question: Has there been a change in labor or responsibilities of the engineer and firemen during the period under discussion?" [1]

This erroneous view of the employees' idea of the principle of increased productive efficiency is the natural consequence of the involved and conflicting statements in their briefs and exhibits. Thus, in the Eastern Firemen's Arbitration (1913) the increase in labor was made the fundamental point in the argument [2] and in the Conductors and Trainmen's Arbitration of the same year, increased productive efficiency was considered to be the outcome of the greater hazards incident to the handling of larger cars and tonnage.[3] The principle of increased productive efficiency was not fully developed and clearly defined in these earlier arbitrations. It did not receive accurate and explicit formulation until the Western Engineers and Firemen's Arbitration in 1915. In this case, the employees denied the identity of wage demands based on increased productive efficiency and on increased labor, risk, and responsibility, it

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, pp. 7525, 7558; Railways' Brief, p. 14.

[2] Eastern Firemen's Arbitration (1913), Supplemental Report of International President, Employees' Brief, p. 1237.

[3] Eastern Conductors and Trainmen's Arbitration (1913), Employees' Final Brief, pp. 6–7.

being stated that the men expected the invention of new machinery and of labor saving devices to lessen their labor and responsibility, but at the same time they expected to share in the gains made possible by industrial advancement.[1] At the present time there is no room for doubt as to the meaning which the employees attach to the phrase increased productive efficiency. It need only be borne in mind that this principle is based upon the increased productive capacity of the train machine, and that the primary effect of this is an advance in the revenues which, the employees claim, should be shared among all railway workers according to their respective contributions to increased output.

In the following pages, therefore, by increased productive efficiency is meant solely participation in revenue gains according to specific contribution to increased output. Increased labor, risk, and responsibility, in reality, have no connection with the underlying principle involved in the employees' argument. They have been considered by the train-service employees as a part of their argument for participation, because both their claims for participation and for wage advances on account of increased labor, risk

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, pp. 7730–7731, 2247-2248.

and responsibility, find their ultimate basis in the introduction of the improved train machine. It is probable, however, that changes may occur in the conduct of transportation, other than those connected with the introduction of larger locomotives, cars, and trains, which may affect the labor, risk and responsibility of other grades of employment as well as of the train-service men. For this reason, therefore, arguments for wage advances based on the principle of increased labor, risk, and responsibility may be presented by all railway employees, entirely apart from any argument based on increased productive efficiency. Confusion is avoided, consequently, by treating the former principle as a basis of wage advance entirely separately from increased productive efficiency, and this plan is adopted in the following pages — the discussion of increased productive efficiency being followed by a treatment of increased labor, risk and responsibility.

The attitude of the railways toward the principle of increased productive efficiency discloses some of the most convincing objections to it. It will be unnecessary to devote attention to the claim of the roads that recent advances in pay have fully compensated employees for any productivity added by the improved train machine. This is

merely a question of fact and has no bearing whatever upon the validity of increased productive efficiency as a principle of wage advance. The railways maintain that the participation of employees in revenue gains according to their contribution to increased output is inequitable, because there is no tangible relation between the work of the employees and increased output. The increase in railway product or output measured in terms of ton or passenger miles depends (1) upon increased traffic and (2) upon the increased capacity of the train machine, and to these two factors employees contribute nothing.

(1) Increased traffic is a result of the natural growth of the country tributary to the various lines, of the location, development, and encouragement of new industries in this territory, and of the working out of favorable traffic relations with other lines at points of interchange. The roads claim that executives of the industrial, traffic, and operating departments originate, increase, and handle this traffic, and the activity of employees has no tangible relation whatsoever to the volume of business or to the revenues received.[1]

(2) Furthermore, output is conditioned

[1] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 9504–9505; Western Engineers and Firemen's Arbitration (1915), Railways' Brief, pp. 6–7.

upon the capacity of the train machine, and increases in this capacity depend in great measure upon improved equipment and more efficient loading of freight or handling of passengers. Large sums of money have been spent upon improvements in the plant, locomotives of greater tractive power, and cars of larger capacity. The introduction of these has been made possible by the credit of the railways, and the employees have no connection with railway credit.[1] As to more efficient loading, the roads claim that this is entirely under the control of officers in the operating and traffic departments, who, working in conjunction with shippers, establish carload minima and bring about the more efficient loading of trains. According to orders, the employees handle a short or long train, empty or loaded to its full capacity, badly or efficiently loaded. Train crews, therefore, the roads assert, have no influence in determining the number of passenger or ton miles produced. Since increased output is a result of increased traffic and capacity of trains, and since employees contribute nothing to these factors, the railways argue that no logic can justify the participation of employees in the revenue gains resulting from

[1] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, p. 9504.

this increased output. Employees have no relation to output, for "they produce train and locomotive miles, not ton and passenger miles." [1]

But, even if it be admitted that a relation between employees and increased output does exist, the railways contend that there is no reasonable method of determining how much of the increase in ton or passenger miles is due to the respective contributions of the several grades of employees, of capital, and of managerial efficiency. If train service employees contribute to increased output, then so do track foremen, station agents, train dispatchers, machinists, car builders, general managers, and stockholders and bondholders who contribute to the funds from which are made the payments for improved equipment.[2] The railways suggest that the statements of employees would lead to the belief that all the increase in railway revenues had been due to the energy, loyalty, and skill of the employees.[3] The roads assert that if it be admitted that employees should share in increased output, a fair division must be made, and the employees' exhibits are ab-

[1] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 9502–9503.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, pp. 70–71.

[3] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, p. 9500.

solutely barren of any information which would enable an arbitration board to determine how much of the increase in output could be attributed to the increased productivity of the several grades of employees, to the additional capital investment, and to increased managerial efficiency.[1] Thus, the railways claim that the principle of increased productive efficiency attempts to establish a relation between employees and increased output, when no such relation exists; and, even if it did exist, the absence of any fair means of calculating the respective contributions of the factors would render the application of the principle impossible.

No definite statement of the position of arbitration boards in regard to the principle of increased productive efficiency can be made, for a sufficient number of boards have not dealt critically with this principle. In the Eastern Conductors and Trainmen's Arbitration (1913) the employees contended that the practice of double-heading increased the productivity of train crews. The board ruled, however, that the increased productivity of the train was due to the increased number of engines and not to any measurable extent to the contribution to extra produc-

[1] Chicago, Burlington and Quincy Arbitration (1914), Proceedings, pp. 9499–9500; Western Engineers and Firemen's Arbitration (1915), Railways' Brief, p. 8.

tivity of the train crew itself.[1] In view of the rulings of this board, and of the slight advances granted by the Western Engineers and Firemen's Board in 1915 in the face of a vigorous appeal to the principle of increased productive efficiency, it may be said that the tendency of arbitration boards at present is to reject this principle as a basis of wage advance.

The position of the employees and of the railways, and the findings of the boards in regard to the principle of increased productive efficiency have been discussed; it remains to consider the validity of this principle and the possibility of its application in arbitration proceedings.

The specific productivity theory of wages and the principle of increased productive efficiency are based upon two propositions — the existence of a definite relation between employee and product, and the possibility of measuring the amount of product imputable to labor. Thus, the specific productivity theory asserts that the amount of

[1] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, p. 22. This board separated mine service from through freight service and awarded a higher rate to mine service. The board said: "In mine service, in some places, in which a train is drawn by two engines, a train crew is sometimes broken up in order that each half of the crew may serve each engine separately. In such service, the prevailing opinion of the board is that the train crew, as distinguished from the engine crews, does contribute to the increased productivity of the train. . . ."

compensation received by labor under perfect competition tends to be measured by the amount of product which its marginal unit produces. Increased productive efficiency contends that the amount of wage advance which the laborer should receive should be measured by the amount of the increased product which he has produced. Again, both theory and principle imply that the specific contribution of the laborer to the entire product, or to increased product, is ascertainable.

Attempts have been made to demonstrate the possibility of applying the specific productivity theory in arbitration proceedings,[1] but these attempted demonstrations are extremely vague and inconclusive. The consensus of opinion in regard to the practical value of the specific productivity theory is that it offers no aid whatever to arbitrators seeking to determine the proper wage of the employees under consideration.[2] Since the principles of specific productivity and increased productive efficiency are virtually identical in their underlying principles, it may be argued that the latter is similarly inapplicable in arbitration proceedings. It will

[1] J. B. Clark, *Essentials of Economic Theory*, Chap. xxvi. See also Proceedings of the American Economic Association, 1907, 3d series, Vol. viii, No. 1, pp. 22–28.

[2] Proceedings of the American Economic Association, pp. 30, 34–35, 39.

be necessary, however, before such a conclusion can fairly be reached, to examine the validity of the assumptions upon which the principle of increased productive efficiency rests; that is, the existence of a definite relation between employees and increased product, and the possibility of measuring their precise contribution to it.

There seems to be no doubt that the total product of the railways is a result of the joint activity of all the factors of production. An increase in the total product may be obtained by an increase in the efficiency of any one of these factors, and the resulting output is still a joint product. It is evident, therefore, that employees, along with the other factors of production, have a direct relation to the output, in that this output results from the joint activity of all the factors. It does not follow, however, because there is a greater output apparent after an increase in the efficiency of one of these factors, that there is also an increase in the productivity of all the other factors. Thus, the train machine may be improved so as to permit the transportation of an increased number of tons or passengers, but the increased revenue therefrom can be regarded only as arising out of the improved train machine, and not from any increased productivity of the train crew itself. The

product of the improved train machine is still a joint product, but any increase in this product apparent after the substitution of improved machinery must be attributed to that factor; and employees, simply because they are working with a more efficient machine, can claim no share in the increased output on the ground that a portion of this increase is due to their greater productivity. It seems, then, that the railways' contention, and the finding of the Eastern Conductors and Trainmen's Board (1913) that the increased product, where there is no greater labor, risk, and responsibility, is due to the increased productivity of the machine itself and not to the greater productive efficiency of the employees, is the only logical conclusion which can be drawn from a consideration of the relation of employees to increased output.

When an attempt is made to ascertain the precise contribution of employees and of other factors to the increased output, the impossibility of applying the principle of increased productive efficiency becomes an even greater obstacle to its acceptance as a basis of wage advance. The employees' exhibits devote little attention to this problem, being limited almost entirely to showing: (1) that there has been an increase in output

in ton and passenger miles between two periods; [1] (2) that although operating costs have increased, there has been more than a proportionate advance in operating revenues; (3) that increases in operating costs have been due to factors other than the particular grade of labor in question; (4) that after these increased operating costs have been paid, a substantial net gain in revenue has been made during the period under consideration; (5) that the disposition of revenue gains has been for the benefit of capital, and therefore labor has not received a reward for its increased productive efficiency.

The crux of the whole question is the possibility of measuring the contribution of employees to increased output. In the Eastern Firemen's Arbitration (1913) the employees arbitrarily assumed that firemen should participate in transportation revenue in the same proportion as the ratio of their total compensation to the transportation expenses. Thus, the ratios of the wages of firemen to the cost of transportation for 1902 and 1912 were found, and it was claimed that these percentages of the transportation revenues for each of the years represented the revenue attributable to firemen for the respective

[1] Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 73; Eastern Firemen's Arbitration (1913), Supplemental Report of International President, p. 413.

years. The difference in the revenue imputable to firemen respectively for 1902 and 1912 minus the increase in wages in that period, therefore, represented the portion of revenue gains which should be paid to the employees of that grade.[1] According to this method only those factors in production appearing in transportation expense accounts would receive a share in transportation revenues. When it is stated that transportation expenses in 1912 comprised only about fifty per cent of total operating expenses and that transportation revenues amounted to nearly ninety-nine per cent of total operating revenues,[2] it is at once clear that this method is unjust, since it gives no participation in increased revenues to stockholders, maintenance of way labor, etc., and makes no allowance for appropriations to additions, betterments, surplus, etc., — these items not appearing as transportation expenses.[3] If factors are to share in the revenue gains in the proportion that they enter into expenses, it seems fairer to calculate the share of increased income on the basis that every item of expense is entitled to receive a proportionate part.

[1] Eastern Firemen's Arbitration (1913), Supplemental Report of International President, p. 426.

[2] Statistics of Railways of United States, 1912, pp. 55, 57.

[3] *Ibid.*, p. 57.

In the following illustration an attempt is made to determine according to this method the increased productive efficiency of firemen on all railways in the United States between the years 1902 and 1912. This will demonstrate, it is hoped, that in order to arrive at any statistical calculation of the wage advance warranted by increased productive efficiency, such arbitrary assumptions must be made as to render the statistical method entirely inapplicable. The object of the calculation described below is to determine the share of increased output attributable to firemen between the years named, assuming as the share of firemen in revenue gain, the ratio of the cost of firemen to total expenses, and applying this ratio, not to transportation revenue, but to income from all sources. Since the firemen are to participate in the output, an attempt is made to calculate a unit of output — the traffic unit suggested in the Western Engineers and Firemen's Arbitration (1915).[1] This unit represents both freight and passenger traffic according to the income received for each kind of service. For example, in 1912 a ton mile yielded in income as much as .381 passenger miles. Consequently, the total number of traffic units is

[1] Western Engineers and Firemen's Arbitration (1915), Proceedings, pp. 7738–7739.

equal to the sum of the passenger miles and of the ton miles reduced to passenger miles. The income of the railways from all sources may be regarded as the return from this total of traffic units, and thus, the income attributable to each traffic unit may be determined. In like manner, the total expenses of the railways may be regarded as the cost of producing the traffic units, and, therefore, when the cost per traffic unit is ascertained, the net income per traffic unit may be determined.

Total expenses in 1912 represented 88.2 per cent of the total income, or of the total number of traffic units, and the factors represented in the total expense accounts produce 88.2 per cent of the traffic units. The firemen in 1912 received 2.31 per cent of the total expenses, or they produced 2.31 per cent of the traffic units attributable to the items in the expense accounts. Since the net income per traffic unit has been determined, that part of the total net income attributable to firemen may be calculated. In the accompanying table the results of this method for the years 1902 and 1912 are shown.

By reference to the table it is seen that the firemen produced in 1912 over two billion and a quarter traffic units, while in 1902 they produced about one billion and a half. Their productivity from 1902 to 1912 increased,

	1902	*1912*
Total traffic units	79,617,187,610	131,898,353,435
Income from all sources	$1,769,447,408	$2,995,596,275
Income per traffic unit	$.0222	$.0227
Total expenses	$1,439,254,172	$2,643,321,113
Cost per traffic unit	$.0181	$.0200
Net income per traffic unit	$.0041	$.0027
Traffic units produced by expense factors	64,728,773,536 (81.3%)	116,445,864,009 (88.2%)
Compensation of firemen (per cent of total expenses)	.0234	.0231
Traffic units produced by firemen	1,514,653,300	2,375,499,459
Contribution of firemen to net income	$6,210,079	$6,413,849

therefore, by three quarters of a billion traffic units. The net income per traffic unit in 1912, however, was only twenty-seven hundredths of a cent, whereas in 1902 it amounted to forty-one hundredths of a cent, and therefore, although the firemen produced more traffic units in 1912 than in 1902, the value of these to the railways was very little more in the latter year, the figures being about $6,414,000 in 1912 and $6,210,000 in 1902.

The increased productive efficiency of the firemen, then, meant only a $200,000 advance in income, and the amount is all that the firemen can claim in revenue gains. Even assuming, then, that the employees should share in revenue gains resulting from the increased productive capacity of the train machine, and assuming again that they should participate in gains in the proportion that their cost bears to total costs, it is seen that the firemen could claim only a negligible figure as their share in the gains.

The method described above takes account of every factor in production, and in this respect, is much fairer than the method proposed by the employees. Yet it is based upon the arbitrary assumption that factors should participate in income according to the ratio of their costs to total expenses. There is no reason why such a ratio should be the measure of the income attributable to the factors. It might easily happen that increased taxes would raise the total of expenses to so high a figure that the ratio of firemen's compensation to total expenses would be lowered to such a point as to show no revenue gain, or even a loss, attributable to them. The above method, also, seeks merely to determine the amount of income due to all firemen; the distribution of this

sum to passenger, through and local freight firemen, etc., according to the increased productive efficiency of each class within that grade of employment would require additional arbitrary assumptions and complicated calculations. As yet no method has been devised which can fairly resolve the joint product into its elements and attribute certain portions of the product to the productivity of certain factors. Until this is accomplished, it is impossible to measure the respective contributions of the factors of production to increased output.

The principle of increased productive efficiency, as the employees conceive it, that is, participation in revenue gains according to specific contribution to increased output, therefore, cannot be accepted as a valid basis of wage advance; for the claim that employees contribute to increased output resulting from the improved train machine is unsubstantiated, and even if that claim were substantiated, the lack of a proper method of calculating specific contributions to increased output precludes any possibility of applying the principle in arbitration proceedings.

Increased productive efficiency, however, presents a basis for wage advances, not on the ground that the employees' productivity is increased to a measurable extent by operat-

ing an improved machine, but on the ground that where profits are advancing as a result of the introduction of improved machinery, society may be benefited through a general advance in the wages of labor, attended with the least amount of friction between employers and employees and with the least chance of additional burden upon the public. There is virtual agreement among economists and investigators that a great part of the labor force of the country is receiving a wage below the amount commonly estimated as the requisite of a normal standard of living. Any betterment in the laborers' condition, therefore, when such betterments can be effected without friction, is socially advantageous. No opportunity should be lost to increase wages and to advance the standard of living of any grade of employees at a time when a wage increase can be made without placing a direct burden upon the industry concerned and upon the public. Arguments based on the principle of increased productive efficiency presuppose increasing revenues from year to year arising out of the introduction of more efficient machinery. Therefore, in those industries in which improved machinery is put into operation, wage advances may be granted without endangering the stability of the industry and without shifting the amount of the

wage increase upon the public in the form of higher prices. A wage advance made at such times would reduce the friction between employers and employees usually engendered by a demand for increased compensation, and would be a social benefit in that the standard of living of the employees involved is raised to a higher level.

This application of the principle of increased productive efficiency as a basis of wage advance concerns all employees, whether or not the introduction of improved machinery directly affects their particular occupation. The entire mass of labor in any particular industry may properly demand a share in industrial progress; but skilled employees, on account of the fact that they are usually better organized than unskilled, and that improved machinery is more likely to affect their occupations directly, seem to stand a better chance of securing a wage advance based on increased productive efficiency. If this be so, the principle, it may be urged, benefits skilled labor at the expense of unskilled. There is every probability, however, that an advance in the standard of living of one grade of employment will, sooner or later, be reflected in the standards of other grades within the industry concerned. The setting of a new and higher standard of living for any

one grade of labor acts as a goal towards which other grades instinctively tend to reach. A wage increase to one grade is usually followed by a corresponding collateral increase throughout the industry, for the maintenance of the relative differentials between grades of labor is strongly ingrained in every class of workmen. It may be said, therefore, that a strict application of the principle of increased productive efficiency, in the long run, will benefit all grades of labor in the industry in which improved machinery is introduced.

Nor does it follow, as employers have frequently claimed, because wages have been advanced on the basis of increased productive efficiency that they should be decreased when the large revenues accruing from the introduction of more efficient machinery begin to decline. A wage advance based on increased productive efficiency is in no sense a variable amount determined yearly by the size of the profits earned by the industry or business unit. The increase in wages on this principle is fixed and permanent, and once the new standard of living has been set, its maintenance should be the paramount consideration.

In conclusion, then, a permanent wage advance may be based upon the principle of in-

creased productive efficiency, not because of the existence of a definite, measurable relation between labor and the increased output arising from the introduction of more efficient machinery, but because it is socially expedient to better the condition of labor, when such betterment may be effected with least friction between employers and employees, and with least chance of passing on the wage advance to the public by increasing the prices of commodities.

The employees' argument for wage advances based on increased labor, risk, and responsibility is much less confused than that based on the principle of increased productive efficiency. The chief wage determinants which employers are supposed to use in fixing the amount of compensation due for any given occupation are the degree of skill, and the amount of physical labor required, the risk and responsibility involved, and the advantages or disadvantages peculiar to the particular kinds of work. When any change in the manner of conducting the industry occurs by which a corresponding change appears in these wage determinants, wage advances or decreases based upon these changes seem fair. For instance, if the organization of section hands on the railways is altered by a

lengthening of sections and the introduction of efficiency methods by which the amount of physical labor and mental strain is increased, wage advances based on such alterations in the nature of the occupation may be fairly demanded. Similarly, if it can be proved that various labor saving devices and better signaling apparatus have lessened the physical labor and responsibility of engineers, then a demand on the part of the railways that engineers' wages be proportionately reduced should be given careful consideration.

It is evident that wage demands based upon increased labor, risk, and responsibility may be brought forward by all grades of railway employees, for any occupation may conceivably be affected by a change in some one of these elements of wage determination. The most rapid and obvious changes, however, take place in those occupations in which improved machinery is more readily introduced, and on the railways train service has undergone in recent years an almost startling alteration, due to the substitution of more powerful locomotives, electric engines, steel coaches, automatic couplers, air brakes, and numerous other mechanical appliances. The train service employees, of course, — the engineers, firemen, conductors, and brakemen, etc., — have been more directly affected by

these changes in the train machine than any other grades of railway labor, and for this reason, increased labor, risk, and responsibility as a basis of wage advance have figured prominently in their demands. The conductors and trainmen hold that there is a certain amount of labor and degree of responsibility and hazard connected with every train movement. If the units comprising this train are increased, then these elements of labor, risk, and responsibility are proportionately increased. With every advance in the size of freight or passenger cars and trains, the conductors and trainmen have a greater number of passengers, or a larger and more valuable freight load in their charge.[1] The firemen claim that the introduction of larger locomotives necessitates more labor in connection with firing,[2] and the engineers assert that larger engines have increased their labor, because the mechanism is more complicated. In addition, the larger trains in use require greater skill in stopping and starting, and the increasingly heavier traffic, faster

[1] Eastern Conductors and Trainmen's Arbitration (1913), Proceedings, Vol. III, p. 9.

[2] Western Firemen and Enginemen's Arbitration (1910), Proceedings, pp. 2913–2914; Denver and Rio Grande Arbitration (1910), Proceedings, pp. 26, 1426; Eastern Firemen's Arbitration (1913), Supplemental Report of International President, p. 413; Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 73.

speed, and greater number of signals have served to increase the engineers' responsibility to a great degree.[1]

The railways concede that when progress in railroading brings about changes by which added labor and responsibility are imposed upon employees, any tangible increase in this burden should be reasonably reflected in the amount of compensation.[2] It is claimed, however, that the labor, risk, and responsibility of employees have been decreased, or increases have been offset, by improvements. Thus, engineers are said to have less work, hazard, and responsibility on account of the installation of air brakes, improved lubricators, automatic sanders and bell-ringers, and the improvement in roadbeds, rails, and signaling apparatus.[3] In the case of firemen, the roads contend that the introduction of superheaters and mechanical stokers has decreased fuel consumption, and consequently, the amount of labor performed.[4] Again, the roads argue that the actual labor and responsibility of

[1] Eastern Engineers' Arbitration (1912), Proceedings, p. 12; Chicago and Western Indiana, etc., Arbitration (1913), Minutes, Vol. II, pp. 1317, 1398–1399; Western Engineers and Firemen's Arbitration (1915), Employees' Brief, p. 73.

[2] Western Engineers and Firemen's Arbitration (1915), Railways' Brief, p. 2.

[3] Eastern Engineers' Arbitration (1912), Railways' Brief, pp. 46–47.

[4] Eastern Firemen's Arbitration (1913), Railways' Brief, pp. 6–7.

the conductors and trainmen are lessened by the adoption of air brakes, automatic couplers and signals, the elimination of train orders on those portions of the road operated by signal indicators, and the placing of an additional man on many trains as a result of Full Crew Laws.[1] Thus, the railways are willing to grant advances in pay to train service and other employees in order to compensate for increased labor, risk, and responsibility, provided it is proved that these elements have not been affected by the introduction of labor-saving machinery and improved mechanical appliances.

American arbitration boards agree upon the principle that any increase in skill, risk, or responsibility by reason of the use of improved machinery should be reflected in the compensation of the employees concerned. The Eastern Engineers' Board (1912) recognized the responsibility, skill and efficiency, mental strain and hazard of the engineers, and agreed that the compensation of this grade of employees should be adequate to cover these factors.[2] In the case of the Switchmen against the Chicago Terminal companies, the board found that the skill required of switch-

[1] Eastern Conductors and Trainmen's Arbitration (1913), Railways' Brief, pp. 7, 26.

[2] Eastern Engineers' Arbitration (1912), Report of Board, pp. 19–20.

men had become greater,[1] and the Eastern Conductors and Trainmen's Board (1913) ruled that since the responsibility of conductors had been increased by the introduction of larger trains, they should receive a greater advance than that granted to brakemen, upon whom the responsibility of a larger train did not rest. The same board, however, held that the claim of increased labor should be disallowed, because the substitution of steel for wood in car construction and the use of various safety appliances served to offset the claim for increased labor.[2] The attitude of the boards may be characterized as in practical agreement with the principle involved in wage demands on the basis of increased labor, risk, and responsibility, with the recognition of the fact, however, that modern mechanical inventions may act as an offset to any increase in these factors.

Increased labor, risk, and responsibility as the basis of wage advance, then, have been urged by the employees, conceded by the railways, and applied by arbitration boards — their acceptance is virtually unanimous. If it can be proved that various labor-saving

[1] Switchmen's Arbitration (1910), Report of Board, Records, U.S. Board of Mediation and Conciliation, File No. 25.

[2] Eastern Conductors and Trainmen's Arbitration (1913), Report of Board, pp. 19–21.

devices, mechanical inventions, etc., have not in other directions effected an offset to increased labor and responsibility, or have not served actually to decrease such labor and hazard, then there is no reason why wage advances on this basis should not be granted.

On account of the fact that increases in labor, risk, and responsibility are more likely to occur in those occupations connected with the operation of trains than in other grades of railway employment, it may be argued that there is a tendency for wage advances based on this principle to work to the disadvantage of other railway labor. The railways have claimed that the demands of the train-service employees are unfair to other labor,[1] and the dissenting opinion in the Georgia and Florida Arbitration (1914) strongly condemned the engineers and firemen for asking an advance which would necessitate a reduction in the pay of other employees.[2] There is a prevalent impression that the compensation of the train-service employees is out of proportion to that paid to other grades of railway labor, and that recent wage advances to the members of the brotherhoods have been made at the expense of telegra-

[1] Eastern Firemen's Arbitration (1913), Railways' Brief, p. 62.
[2] Georgia and Florida Arbitration (1914), Report of Board, p. 13.

phers, maintenance of way men, and others.[1] It is certain that the wages of the train-service employees during the last decade have increased more rapidly than the wages of other railway workmen, but it is not at all certain to what influence this has been due. It may be accounted for by the more obvious or greater relative increases in labor, risk, and responsibility; by the standardization movement which has been undertaken on a larger scale by the train-service employees, and which always involves an upward movement of the standard rate; or it may be ascribed to the superior organization of the four brotherhoods. The employees, both skilled and unskilled, claim that the strong organization and consequent superior bargaining power of the train-service employees have secured their relatively greater increases, and there have been pleas by unorganized or weakly organized railway labor to the brotherhoods for an indorsement of their demands,[2] and even a suggestion of a defensive and offensive alliance of all the employees on the railways.[3]

Whatever the real cause of the widening

[1] Proceedings of the American Economic Association, 1914, 3d Series, Vol. VIII, No. 1, p. 46; Advanced Rate Hearings (1910), S. Doc. No. 725, 61st Congress, 3d Session, Vol. VI, p. 4366.

[2] *Locomotive Firemen and Enginemen's Magazine*, April, 1907, pp. 545–546.

[3] *Ibid.*, March, 1910, p. 414.

of the differential between skilled and unskilled labor, it cannot be held that the telegraphers, station agents, section hands, etc., would have received greater advances, had not the train-service employees been so successful in obtaining their demands. This position would assume the existence of a definite wage fund destined to be apportioned among the various grades of railway labor in the form of wage increases, with the result that one grade's gain would be the others' loss. Such a fund has never existed. It is hardly unjust to the railways to say that they, like other employers, rarely pay more to their labor than they are forced to, and for this reason, the widening of the differential between the train-service and other employees must be attributed, not to the diversion of the just increases of the latter to the more skilled group, but to the relatively stronger strategic position of the train-service employees as a consequence of their more highly developed organization.[1]

Indeed, there is every likelihood that the existence of a powerfully organized and highly paid group of labor in any industry — such as the engineers and conductors in railway transportation — far from being detri-

[1] Eastern Engineers' Arbitration (1912), Employees' Brief, p. 17: Western Engineers and Firemen's Arbitration (1913), Proceedings, pp. 7782–7783.

mental, may, in the long run, be beneficial to the interests of the unorganized and low-paid workmen. There is a tendency among the employees engaged in any industry to keep a close watch on the wages paid to other grades of their fellow workmen, and the differential between their wage and that of some other grade of employment is jealously guarded. Thus, on the railways, wage increases usually move in cycles, an advance to engineers being followed at a close interval by an equivalent advance to firemen, conductors, and trainmen. Existing differentials are more jealously maintained among the train-service employees than among other railway workers, but that the latter do aim to maintain their relative level below the skilled groups is evidenced by their references in arbitration proceedings to the advances made to train-service employees and by their claims to proportionate advances.[1] Thus, an increase in the wages of a highly paid group of employees, on account of this tendency to maintain existing differentials, tends to put in motion a cycle of wage advances extending to all grades of labor in the industry. Therefore, an increase in wages to train-service employees, based on increased

[1] Southern Railway Arbitration (1913), Report of Board, pp. 15–18; Wheeling and Lake Erie, etc., Arbitration (1914), Proceedings, pp. 153–156.

labor, risk, and responsibility arising from the improved train machine, or on any other principle of wage advance applicable only to those grades of railway labor, may ultimately result in an advance in the wages of the unorganized or poorly organized employees.

CHAPTER V

PRINCIPLES GOVERNING THE ARBITRAL DETERMINATION OF WAGES

THE purposes of this final chapter is to combine the conclusions reached in the preceding pages and with their aid to suggest some principles which may govern the determination of wages, not only in railway arbitration but also in the settlement of disputes involving employees in other industries. The bases of standardization, the living wage, the increased cost of living, increased productive efficiency, and increased labor, risk, and responsibility have been considered as isolated principles. In this chapter stress will be laid more upon the applicability of these principles considered as a whole. The three problems which commonly confront arbitration boards dealing with wage matters are the following: (I) What is the test of the adequacy of the wages received by any given grade of employees? (II) What principles should properly govern the advance in wages? (III) What effect should the claim of inability to pay increases have upon wage advances? The succeeding paragraphs will treat these questions in the order named.

I. The Adequacy of Wages

It is impossible to approach the question of adequacy without some conception of a system of wages which may be used as a standard to which existing wages may be compared. The wage system in any industry or in any particular business unit may be considered as a structure with the wages paid the lowest grade of employees as the foundation, surmounted by successively higher levels representing the various grades of skilled labor. The foundation wage is called here the primary wage; the increasingly higher levels are termed secondary wages. The amount of differential between the unskilled and any grade of skilled labor is simply the difference between the secondary wage of the latter and the primary wage. If the industry or business unit is paying a standard rate to each occupation, the primary wage is the standard rate of the lowest grade of employees, and the standard rate of each of the skilled occupations represents the secondary wage of that occupation. If a standard rate is not in force, the average wage of each occupation must be regarded as the measure of the primary or secondary wage. Skilled grades of employment receive a favorable differential over unskilled on account of

the greater skill, efficiency, hazard, and responsibility, etc., involved in their occupations; and the amount of this differential is largely, though not entirely, a matter of custom and usage. The conception of a differential wage is not purely theoretical nor fanciful, for it is used in wage determinations in Australasia,[1] and, as pointed out in the chapter on increased productive efficiency, all employees keep a close watch on their differential with a view to the maintenance of their position relative to other employees in the same industry.

The requisites for a construction of a fair differential wage system, then, are an estimate of the amount of compensation due the lowest grade of unskilled labor as a minimum, and an estimate of the proper differential above the minimum for each grade of skilled labor in the industry concerned.

The differentials at present existing between the primary wage and secondary wages are not necessarily the proper amounts commensurate with the greater skill, risk, etc., of skilled employees. As noted above, there is a tendency for secondary wages to draw away from the primary wage, counteracted in some degree, it is true, by the weaker tend-

[1] H. B. Higgins, "A New Province for Law and Order," *Harvard Law Review*, Vol. xxix, No. 1, pp. 15–17.

ency of secondary wage advances to be reflected in primary wages. This widening of differentials was ascribed to three causes, — the greater relative increases in labor, risk, and responsibility of the skilled groups, the influence of the upward standardization movement, and the superior bargaining power of the more strongly organized skilled employees. The latter cause is undoubtedly the most influential. Proper differentials, therefore, are differences between wages which have been determined under precisely similar conditions; that is, the differences between the present secondary wages and a primary wage, determined on the assumption that the lowest grade of labor has had the advantage of powerful organization, or the differences between the present primary wage and secondary wages determined on the assumption that the skilled employees have lacked the advantages of organization.

In the present wage system of any industry or business unit, the proper differential may be secured either by a reduction in secondary wages by the required amount, or by an increase in the primary wage. In the preceding pages, it was held that there were two determining considerations in respect to wages, the payment of a living wage to the lowest grade of employees, and the maintenance of

the standard of living of all employees. A reduction in secondary wages, therefore, must be eliminated, for such action, apart from the unrest inevitably resulting, would reduce the standard of living of skilled employees. The latter alternative, increasing the primary wage, must be accepted. Since the lowest grades of workmen, in a majority of cases, are receiving compensation below the living wage level, and since their aim from the first has been to secure a living wage, it is fair to assume that with a strong organization they would have obtained that amount. A system of wages constructed with a primary wage sufficient to secure a normal standard of living and with secondary real wages kept at their present level, since the differentials over the increased primary wage are thus set at their proper height, satisfies the requirements that the lowest grade of labor receive a living wage, and that the standard of living of all grades of labor be maintained. A differential system of wages so constructed is advanced as the standard to which existing wages may be compared as a test of their adequacy.

The two fundamental principles which may fairly govern the wage determinations of arbitrators are the grant of a living wage to unskilled labor, and the maintenance of the standard of living of all employees. The first

of these is the more important, since, with the upper grades of labor, there is no question of their securing enough to insure a decent standard of living. With this in mind, therefore, the test of the adequacy of wages paid to unskilled employees is as follows: Are the lowest grade of employees receiving as a minimum a living wage determined according to the costs of food, rent, clothing, etc., at this particular time and place? If they are not, the wage received is inadequate, and must be increased by such an amount as to enable the unskilled laborer to secure a normal standard.

As to the adequacy of the wages paid to the various grades of skilled labor, the first test is the adequacy of the wages received by the unskilled in the same industry or business unit. If these workmen are not receiving a living wage, the test of the adequacy of the wages paid to skilled employees is as follows: Have the wages of this particular grade of labor been reduced as a result of an increase in the cost of living since the last wage adjustment? If the wages have been so reduced, then they are inadequate, and must be increased by such an amount as to enable the skilled laborers concerned to maintain their former standard of living. If, however, there has been no increase in living costs, and

if the unskilled employees in the same industry or business unit are paid compensation below the living wage, then existing skilled wages must be considered adequate.

In arbitration proceedings, therefore, preference must be given to the demands of unskilled employees receiving less than a living wage, every attempt being made to decrease the widening differential between the primary and secondary wages by greater proportionate increases to unskilled labor. To this grade of labor every concession in respect to wages must be granted until the living wage level is reached, and until that level is reached no advance should be awarded to skilled grades except on the basis of the increased cost of living. This advance is necessary to maintain the standard of living. The adoption of such a policy by arbitration boards would work no hardship to any one grade of labor; unskilled men would gradually approach a normal standard of living, and skilled men would have their present standard of living protected.

The general application of the principle of standardization to the wage payments of all employees would greatly simplify the adoption of the differential system of wages described above. The award of a living wage to the unskilled employees would establish

a minimum and tend to equalize rates of pay for that grade in the area involved, but it would be a difficult matter to determine the amount of the differential above this minimum for skilled occupations in which a great diversity of rates existed either within or as between business units. The principle of standardization is designed to abolish within a given area the multiplicity of rates paid for similar service by the application of one standard rate for each occupation, minor differences in the nature of the work, due to varying physical and other conditions, being disregarded. The adoption of this principle by arbitration boards would render the determination of the exact amount of the differential between various grades of labor simple in comparison with a determination based upon the average wages of each grade. If changes in the nature of an occupation called for an increase or decrease in the differential above the minimum paid to unskilled labor, such changes could be readily reflected in a standard rate, whereas, with the existence of a diversity of rates, the difficulty would be great. For this reason, and also on account of the comparative ease of applying general principles of wage advance, in addition to the other advantages mentioned above, there seems to be sufficient warrant for the appli-

cation of a standard rate in the case of the wages of all employees, and over as large an area as practicable.

In applying this principle, however, arbitration boards are limited by the area covered in the wage dispute to be settled by the award. This area may vary in size from a single business unit to all the units of a given industry throughout the country. The extent of the area depends mainly upon the degree of centralization in the union to which the employees belong. Unorganized or weakly organized laborers are less likely to secure standard rates over a large area than are members of powerful, centralized unions. Arbitration boards, however, could aid the weaker employees to secure standardization if the awards in disputes involving single units where the same grade of employees is concerned were made to conform with each other as closely as circumstances permit, provided, of course, that the award used as a basis is not a compromise decision. District standardization is the most that can be hoped for at the present time, except for such exceptionally powerful organizations as the railway brotherhoods, where there is a strong tendency toward national uniformity.

The principles of standardization and the living wage must be looked to in order to

secure the differential wage system suggested. Standardization establishes one standard rate for each grade of labor over a given area and temporarily fixes the amount of the differentials between grades of employment. The living wage secures a normal standard of living for the lowest grade of employees, and is justified by the fact that the present differentials between unskilled wages and those paid skilled grades are greater frequently than the differences in skill, risk, and responsibility call for; that a number of unskilled workmen are receiving a wage insufficient to secure decent livelihood, and that payment below the living wage level constitutes a social evil. Until the lowest standard rate is equivalent to a living wage, the rates of other grades of employees must be kept at the level required to maintain their present standard of living. The absolute amount of the standard rate for each grade of employees within the area should vary only on account of differences in living costs between sections of the area, the aim being equality of real wages.

II. Principles governing Wage Advances

On the assumption that the lowest grade of labor in the business unit or industry is receiving a living wage, the following princi-

ples of wage advance may be applied to all grades of employment, skilled and unskilled alike: (1) increased cost of living; (2) increased labor, risk, and responsibility; (3) increased productive efficiency.

(1) The principle of the increased cost of living is designed to maintain the standard of living. Since the standard of living depends in the main upon the amount of income received and the costs of commodities, an increase in the latter without a corresponding increase in the former is tantamount to a reduction in wages and in the standard of living. The maintenance of the standard of living is of utmost importance to society, and for this reason it is imperative that wages should advance in the same proportion as living costs increase. By the cost of living is meant not only the cost of food, but also the costs of rents, clothing, fuel and light, and sundries.

The increased cost of living principle of wage advance is applicable to all employees of every grade. The actual advance in living costs, however, may vary for the different grades of employment on account of the unequal percentages of total income spent for food, clothing, etc., by those receiving different amounts of income. This principle is applicable also in either single or concerted

movements. In the latter, by reason of the extensive territory involved and of fluctuations in the cost of living for different sections of the area, arbitrators sometimes hesitate to apply a single percentage of increase to wages. There seems to be no real injustice done, however, if the average increase in the cost of living for the area concerned be taken as the measure of the advance in wages. If possible, a refinement might be made by a subdivision of the area and a separate determination of the different increases in living costs for each of these subdivisions.

The claim of employers that if wages are advanced in the same proportion as the increase in the cost of living they should likewise be decreased in the same proportion as living costs decline should not be allowed. In the past, wage reductions during long continued periods of declining prices have been vigorously opposed by employees, and the result has been a decrease in wages by a somewhat smaller ratio than the decrease in prices. Arbitration boards should endeavor to raise the standard of living of employees whenever possible, and this result can be obtained during periods of declining prices by a refusal to allow decreases in wages equal to the decline in prices, without the likelihood of friction between employers and employees, and with-

out going counter to the normal trend of wages during long periods of declining prices.

(2) Since the labor, risk, and responsibility involved in any occupation are the usual determinants of the amount of wages paid, any increase in these elements demands a corresponding increase in the wage. The amount of wage advance due to increases in labor, risk, and responsibility must be estimated arbitrarily, for there is no exact unit for the measurement of these factors. Increased labor, risk, or responsibility as a basis of wage advance is applicable to all employees, both skilled and unskilled. It may be argued that as the living wage has been suggested as the basis of wage payment to unskilled labor, these factors of labor, risk, and responsibility do not properly enter into the determination of their wage. The living wage, however, is the amount due for the minimum of skill, labor, risk, and responsibility, and any increase in these must be added to the living wage compensation.

Since the degree of skill, labor, risk, and responsibility usually influences the height of the differential paid skilled labor above the wage of the unskilled, any increase in these factors for a given grade of skilled labor operates to change its existing differential. As changes in labor, risk, and responsibility

are most likely to occur in skilled groups in which modern mechanical appliances produce the most noticeable effects, the result of the application of this principle will be a widening of the differential of the skilled grades over the unskilled. There are several influences, however, which may tend to keep the differential amounts constant. Thus, the introduction of various labor-saving and safety devices in one set of operations connected with a skilled occupation may serve to lessen or to offset increases in labor or risk in another set of operations. A more definite check upon an increase in the differentials favoring skilled labor is that wage advances to the lower paid employees based on the increased cost of living are likely to be greater than similar advances to men high up in the scale of compensation. This happens on account of the fact that food, the commodity ordinarily showing the greatest advance in price, constitutes a larger item of expenditure for small incomes than for large ones. Thus, a strict application of the principle of the increased cost of living to unskilled employees and a recognition of reductions or offsets in increased labor, risk, and responsibility of skilled employees by the adoption of labor-saving and safety devices may serve to keep the differentials between skilled and un-

skilled occupations constant. There is no reason, however, for maintaining differentials if changes in the nature of an occupation call for an increase or decrease in the amount of compensation above the living wage. Advances based on the increased labor, risk, and responsibility principle tend to keep the differentials between various grades of labor at their proper level.

(3) In the chapter on increased productive efficiency it was held that participation in revenue gains according to specific contribution to output was not a valid principle of wage advance, but that wage advances might with propriety be made during periods in which the particular business unit or industry was enjoying increasing revenues from year to year, due to the introduction of improved methods of production. Wage advances on this principle are designed to give the employees some share in industrial progress and are based on social expediency. It is natural for employees to consider themselves entitled to an increase in wages at those times when the industry employing them is reaping large profits, especially when the employees are operating the machines which make increased profits possible. At such periods wage advances can be made without direct injury to the industry and

without the necessity of passing on the advance to the public in the form of higher prices. Society will be thus benefited by the removal of any tendency on the part of the employees to strike and by the improved standard of living resulting from an increase in wages. In periods of intense business activity and increased demand for the commodity produced, when profits increase by leaps and bounds, wage advances may be granted on the same basis of social expediency. A concrete illustration of the application of this principle is given by the recent wage increases granted by munition manufacturers as a result of the immense profits earned by trade with belligerents.

Wage advances based on the principle of increased productive efficiency are applicable to all employees within the unit or industry, and the division of the total amount to be apportioned should be equal. The determination of the proper amount to be thus distributed must be, of course, on an arbitrary basis. Claims of employers that if the men share in industrial progress they should also bear the burden of any retrograde movement in industry should be disallowed, for a wage advance on the principle of increased productive efficiency is to be regarded as permanent, since the proposed reduction would

affect the employees' standard of living for the worse.

The question may arise as to whether the three bases of wage advance outlined above are cumulative in their application. Should the percentage or amount of increase determined as correct for each of the above be added and applied to the existing wage, or should the largest only be applied, the others being included in that one percentage or amount? This question may be answered by considering the ultimate basis for each specific increase. A wage advance on the principle of the increased cost of living serves merely to maintain the standard of living, and wages should be advanced by the amount of the increase in living costs as a minimum. If applied to all wages alike, the relative standard of living of the various grades would be unchanged. It may happen, however, that a change is warranted in some existing differential on account of a greater or less degree of labor, risk, or responsibility involved in a particular occupation, and advances based on an increase in labor, risk, or responsibility serve to bring about this change and to keep differentials at their proper level. The latter advance, therefore, would not be included in the advance on the basis of the increased cost of living. A wage advance on the

principle of increased productive efficiency affords an opportunity to employees to participate in industrial progress; that is, their standard of living is to be raised by an advance in addition to what the mere maintenance of the standard of living calls for. Such a wage advance, therefore, is to be entirely separated from the other two bases. The three wage principles, increased cost of living, increased labor, risk, and responsibility, and increased productive efficiency are consequently separate and distinct, and all three may be fairly applied in a single arbitration award, the total amount of increase to be finally added to the existing wage being determined by the sum of the increases deemed proper.

The strict application of the above mentioned bases of wage advance will operate not only to secure a living wage for the lowest grade of employees and the maintenance of the standard of living, but also an advance in the living standards of all grades of labor. The effect of the general progress of civilization and of the development of ambition and education among the laboring class upon the standard of living has already been referred to. In addition, however, there are two more tangible factors which may serve to better the condition of labor. An increase in wages based on the principle of increased productive

efficiency represents an advance in excess of that needed merely to maintain the standard of living. And further, the refusal of arbitration boards to permit a decrease in wages corresponding to the decrease in living costs during long time periods of declining prices will also advance the standard and enable employees to secure a higher scale of comfort.

On the assumption that the lowest grade of employees in the industry concerned are receiving a living wage, the test of the adequacy of the wages paid any grade of employment is as follows: Have living costs increased since the last wage adjustment affecting the employees concerned? Have there been any increases or decreases in labor, risk, and responsibility in this occupation since the last advance in wages? Is the industry or business unit in which the men are employed enjoying increasing profits as a result of improved methods of production or of increased demand? If these three questions taken together can be answered in the affirmative, then the wages received are inadequate and should be advanced.

III. Effect upon Wage Advances of Inability to pay

It is ordinarily difficult for a board to obtain any facts upon which a conclusion can be

reached regarding this question. Just as employees in making wage demands usually represent their condition as far worse than actual investigation demonstrates, so employers, desiring high profits and recognizing that wages and profits come out of earnings, ordinarily claim that an increase in labor costs will cut down profits to a point which they consider an inadequate return on the investment, or in some cases will entirely destroy the possibility of making any profit at all. Statistical exhibits showing for an individual business the actual amount of profit are usually misleading and practically useless, for the variations and intricacies of different methods of accounting enable employers to show that the particular business is earning a minimum amount. The employees, on the other hand, usually present equally convincing proof that profits are ample and that wage advances can be made without injury to the owners or to the public. Arbitrators have no way of discovering which of these two statements is correct; nor have they the time or the ability to investigate the true conditions and arrive at a conclusion based on the actual facts.

Even if arbitrators were able to ascertain the actual profits of an industry or individual business, when the question arises as to

whether these profits are large enough to permit a wage advance, a further difficulty appears, for there is no generally accepted opinion as to what constitutes a fair rate of profit, any more than there is a universal opinion as to what constitutes a fair wage. Some investigators hold that weight should be given to the profitableness or unprofitableness of a business in determining wage advances; others maintain that this position is untenable. The whole discussion as to whether the inability of the particular business to pay should affect wage advances is marked by bias, inaccurate reasoning, and a lack of any definite theory of fair wages and profits.

On the basis of the conclusions reached in the preceding pages, it must be granted that the payment of a living wage to the lowest grade of employees, and the maintenance of the standard of living of all employees, skilled and unskilled, by an increase in wages proportionate to the increase in the cost of living, must be regardless of the financial condition of any industry or unit of it. The payment of a living wage and the maintenance of the standard of living are essential from a social point of view; and there is no reason why an unskilled laborer should become an unfit member of society by receiving a wage lower than a decent, normal stand-

ard, or why a skilled laborer should take a lower position in the social scale, because the business in which he is employed is unfavorably situated in regard to transportation facilities; is failing on account of a fall in demand for its products; or is in financial straits as a result of mismanagement or any other similar misfortune.

The effect of increases based on the living wage and on the increased cost of living will be, of course, an advance in operating expenses, and a consequent reduction in the amount available for dividends, surplus, etc. In some cases these wage advances will be offset by the increased efficiency of labor, the introduction of improved machinery, more efficient management, and a larger amount of product; in other cases, however, these counter influences may not operate, and profits will be reduced or entirely absorbed by the wage advances. Two courses of action are possible for the latter class of establishments — retirement from business or an increase in the price of the product. The first will affect only a few persons, the latter affects all who purchase the particular commodities produced. Either of these two results, however, it may be held, is of less disadvantage to society than the underpayment of laborers. It has been asserted that if

prices increase as a result of wage advances, the laborer is just as badly off as he was before the increase, and therefore it is useless to advance wages on the basis of the increased cost of living. It has been pointed out, however, that although the wage-earning class numbers about four fifths of the total population, yet it consumes only about two fifths of the annual aggregate of products and services, the rest being enjoyed by the employing and propertied classes. If the rise in wages were reflected in all prices by an identical rise, the wage earning class would bear but two fifths of the additional price. Even this burden would not be borne if the rise in prices occurred in those commodities which do not constitute items of expenditure in wage earners' families.[1]

In the application of the principles of the living wage and of increased cost of living, then, the inability of the business to pay should not be allowed to affect the increase. Wage advances based on increased labor, risk, and responsibility are likely to total a small amount and the effect upon profits will be almost negligible. As to the application of standardization, precedent in arbitration proceedings in the United States has established the principle that the inability of par-

[1] Webb, *Industrial Democracy* (1902 ed.), p. 781 (note).

ticular units to pay the standard rate should not influence the uniform payment of that amount throughout the section or district. There appears to be no reason why this precedent should be regarded as unfair, unless it could be shown that the standard was not at the proper differential level above the compensation of the lowest grade of employees. The claim for wage advances based on the principle of increased productive efficiency can be brought forward only where the industry concerned is earning increased profits from improved methods of production. Inability to pay, therefore, has no bearing on the possibility of applying this principle, but only upon the part of the increased profits which is to be granted to the employees in the form of wage advances.

As a general proposition, then, it may be stated that the inability of the industry or units to pay should not be permitted to affect wage advances. It is necessary, however, to qualify this statement somewhat when this inability arises from general business depression, and not from any chronic condition of the industry concerned. Periods of business depression are usually brief, and since, at such times, the margin of profit may be temporarily so narrow that an advance in wages will require retirement from

business or an advance in prices, wage increases should be denied. Demands based upon increased productive efficiency and increased cost of living are not likely to be presented during periods of depression, but if employees do make such demands they should be refused. When a wage advance is awarded on the basis of the increased cost of living after a period of depression, care should be taken to measure the increase in living costs, not from the year of lowest price depression, but from the year of the last wage adjustment.

One exception should be made to the general statement that no wage advances should be granted during years of business depression. When demands are made upon the living wage principle, arbitration boards should award the full amount of wage advance necessary to secure the normal standard of living regardless of general business conditions. The payment of a living wage is of the utmost importance and should receive first consideration. Employees, however, in planning requests for wage advance on any of the above principles should endeavor to select the most opportune time for presentation, avoiding periods of depression and delaying requests, as the conductors and trainmen did in 1908.

Finally, arbitration boards should refuse reductions in wages during periods of depression, because a decrease in wages will hinder readjustment and the return of business prosperity by checking the incentive of employers to introduce economies in costs other than labor, and by decreasing the efficiency of employees.

The above principles for the government of arbitration awards concerning wages are suggested as a substitute for the usual compromise decisions. Arbitration, as it is now practiced, is merely mediation conducted under the guise of judicial procedure. On account of its essentially judicial nature, an arbitration award is expected by the employers and employees to approach some standard of fairness and reasonableness. Compromise decisions fail to meet this expectation, and the attempt has been made in this chapter, to suggest some fair and reasonable bases of wage advance, in the belief that their application will make the boards' findings more in accord with the underlying principle of arbitration.

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